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REPORT

of the

SEVENTH ANNUAL MEETING

January 21, 1932

Harrisburg, Pa.

ROBERT F. BRINTON
President, West Chester, Pa.

R. H. OLMSTEAD
Secretary-Treasurer, State College, Pa.

CONTENTS

Electrically Operated Dairy Sterilizers*

By JOHN E. NICHOLAS**

THE DRY AIR STERILIZER

The dry air sterilizer is a galvanized iron box which is insulated on all sides and is divided into two compartments. The electrical heating elements are located in the bottom compartment protected on the top by a diffusion plate and screen. The inside dimensions of this box are 22 inches wide and 32 inches deep, the upper compartment being 20 inches high and the lower compartment 46 inches high. The lower compartment will accommodate 10 gallon or 5 gallon cans when the occasion demands. The upper compartment is intended for such containers as milk pails, and any small dairy utensil articles that are used on the dairy farm. The average load in weight at one sterilization is approximately 75 to 80 pounds of material. This load may include a variety of combinations of pails, receivers, cans, strainers and stirrers depending upon individual farms.

Table I. Bacteriological Plate Counts For The Dry Heat Sterilizer

Date of Sample	Sample Number	Average Count Before Washing	Average Count After Washing	Average Count After Sterilization	REMARKS
11/ 9/31	23	195	38	0	
	24	360	22	0	The pails were drained as much as possible, but approximately 2 cc of milk remained in each before washing.
11/16/31	25	16,134	192	0	
	26	350	240	0	
11/24/31	31	1,250	245	0	
	32	3,000	170	1	

*Extract from the publication authorized by the Director of The Pennsylvania Agricultural Experiment Station as Technical Paper No. 553.
**Associate Professor of Research, Department of Agricultural Engineering, The Pennsylvania State College, State College, Pa.

Table I shows the bacteria count of the utensils which have been sterilized in this box on the farm where the research is conducted.

METHOD AND COST OF OPERATION

The utensils are sterilized twice a day. The average time for heating is approximately ¾ of an hour, which varies with the quantity to be sterilized. The usual daily procedure consists in washing the utensils with a good dairy cleanser in lukewarm water, rinsing with cold water, and placing them into the box in the wet condition. The moisture left on the utensils has an advantage since it assists in a more uniform heat distribution. When the washing is completed, the box is filled and the door closed. The thermostat automatically cuts off the current and the utensils are left in the sterilizer until they are needd at the next milking. This has the advantage of keeping the utensils in a clean and sanitary place which is free from outside contamination. When the utensils are taken out they are en-

tirely dry. No moisture exists at any point in the box. It is one of the most convenient methods of sterilizing insofar as the farmer is concerned, because it requires absolutely no attention.

In approximately three months of operation, or eighty-five actual days, the dry heat sterilizer used 290.6 kw-hr., and sterilized 6588 pounds of dairy utensils, which is equivalent to about 1150 pieces. The average daily energy consumption in two sterilizing operations is 3.4 kw-hr., or 1.7 kw-hr. per sterilization.

Clinical Diagnosis of Mastitis

By D. H. UDALL

Cornell University, Ithaca, New York

IN considering any disease, our first object is to obtain a clear mental conception of its clinical and anatomical characteristics, and to know what changes have taken place in the diseased tissues. In defining mastitis we will disregard unusual types and consider the form that is of so much interest to the farmer, the distributor, the dairy inspector, and to some extent the health officer. Mastitis is a chronic inflammation of the udder caused for the most part by a special form of streptococcus that attacks only the udder of the cow. This inflammatory disease leads to a destruction of the secreting glandular tissue which is replaced by connective or scar tissue; this gives to badly affected quarters their firm indurated condition. From time to time the inflammation becomes more acute or active, the milk becomes flaky or contains clumps ("garget"), and the affected quarter may swell and show heat and pain. According to Skar, of Oslo in Norway, nearly all acute mastitis is a flare-up of the chronic form. This was expressed by a man with whom I was talking yesterday, as a tendency on the part of certain of his cows to have mastitis. The tendency for certain cows to have mastitis means that they have it continuously, but between active attacks it is chronic, or as Doctor Hucker calls it, sub-clinical. Thus it is a chronic disease, progressive in character, marked by recurrent acute attacks, and finally leading to a condition where the glandular secreting tissue is largely replaced by connective tissue. By this time an abundant secretion of milk is impossible and the animal becomes badly damaged or worthless for dairy purposes.

Cows with mastitis present various problems according to the parties who are interested. From the standpoint of the owner mastitis means a diminished milk flow; it causes an economic loss. Such individuals may give plenty of milk for two or three months after freshening and then they begin to dry off, or they are low producers. Many cows that are poor producers are really good cows with damaged udders.

As milk dealers you are interested in the quality of the milk; you want a product that is neither damaged nor spoiled. When the

disease becomes sufficiently severe, or when there is a flare-up of a chronic form, the milk usually carries large numbers of bacteria, its flavor is changed and it is a damaged product. It cannot possibly be restored to normal by any method of processing.

The health officer is chiefly interested because of the possible presence of bacteria that are dangerous to man and this is comparatively infrequent. There is also the possibility that small quantities of milk may contain relatively large amounts of damaged liquid rich in toxic products.

The dealer, the consumer, and the health officer are directly interested in the control of the milk, and the producer is also concerned with the control of mastitis. In the past the veterinarian has been chiefly consulted to treat acute individual or group attacks. But there is developing a changed conception of his relation to disease control. As in human medicine, the prevention of disease is receiving much greater attention. A dairyman who will employ a person skilled in the control of mastitis to help maintain the health of the herd will spend his money more effectively than if he merely hires somebody to treat a sick cow. Today certain milk companies are employing veterinarians for this purpose, and I know of a number of herds under systematic examination and special sanitary methods of milking for the purpose of maintaining normal udders. The fundamental problem in milk production is the maintenance of healthy udders.

I have been told that milk dealers are not well informed on the nature of mastitis, but I know of some who are and certainly it is a part of their business to become acquainted with the main facts concerning it.

In our brief study of this disease we have made an effort to become familiar with all of information available by means of observation in the stable. The cows themselves, both normal and diseased, have been thoroughly examined. Bacteriological and chemical tests of the milk are of great value, but without knowledge of the udder that supplies the milk wrong conclusions may be drawn. Failure to observe this principle has resulted in the publication of much misinformation about mastitis. The common statement that milk came from apparently normal udders means little. Doctor Hucker's work is one of the first instances of which I have knowledge where the man in the laboratory has really known the kind of cows from which his material came.

CAUSES OF MASTITIS

You are chiefly interested in the cause, the manner of spread, and the methods of control. There is no debate over the question that the disease is caused by infection. With few exceptions the badly diseased udder carries large numbers of bacteria, and herds from which such udders have been eliminated show comparatively little fibrosis. Furthermore, the disposal of infected cows and the practice of sanitary milking has repeatedly checked the disease. It is sometimes stated that we know little of the manner of spread of the disease for the

reason that experimental transmission by means of close association of a diseased and a normal cow has failed. What we fail to accomplish under artificial conditions may readily occur under natural conditions. I have yet to read of any extensive effort to reproduce the disease experimentally under conditions maintained in the average stable. The mere fact that the promiscuous mixing of susceptible heifers and diseased adult cows is followed by a spread of the disease is sufficient proof that the infection passes directly or indirectly from cow to cow, either on the hands or milking machine, or on the floor. We know that if the milk of an infected udder is injected into the teat of a normal cow she will develop mastitis very promptly. It seems logical that in time some of the infection from these naturally infected cows would, by the process of milking, enter the non-infected teat, and I believe this is the way in which the disease is usually carried.

In the control of diseases caused by specific infection, such as tuberculois or Bang abortion disease, all that is necessary is to break the channel of infection. After all of the infected animals are disposed of the disease cannot possibly reoccur without again introducing the infectious agent. Unfortunately this principle does not hold true in mastitis. In this respect it resembles calf scours and calf pneumonia. If we eliminate every cow that has mastitis and begin with an entirely normal group of young animals, it is possible, sooner or later, to have a badly infected herd without the introduction of a diseased individual. In other words, the habitat of the mastitis streptococcus is somewhere in the stable; according to a number of bacteriologists it is in the udder of the normal cow. Dr. Rosell has tried to find it outside the cow and has failed. On this subject there is much to be learned from bacteriological studies in mastitis-free herds. Some are of the opniion that the normal udder is the habitat of the mastitis streptococcus, and that the disease appears whenever the resistance of the udder is lowered. It is quite certain that it appears when the end of the teat is badly bruised. It is apparent then, from our present knowledge, that control depends on constant vigilance, and the practice of sanitary milking and care of the udder. But the infection spreads much more readily, and chiefly, from diseased cows. In our mastitis-free herds we have not been able to find any considerable number of streptococci in milk samples.

Recently I examined the cows in a herd where a new milking machine had been installed. Apparently the cups had injured the teats through improper adjustment. In two weeks five cows were fitted for the butcher. Certain milkers are followed by a trail of mastitis cows. In these instances mechanical injury of the teats causes the trouble.

Most dairymen believe that mastitis is caused by high protein feed. There is no doubt that cows already affected with the disease in the form of fibrous thickenings in the udder do develop a more active form under the influence of high protein feed. I doubt if it is possible to initiate mastitis in a normal cow by such feeding.

Cows often develop trouble when they freshen. This may be explained by the presence of a slight mastitis that has previously exist-

ed, perhaps for a year, and under the strain of renewed lactation the condition becomes actively acute. Often the cow's udder is not properly cared for at the time of freshening. Perhaps this is left entirely to the calf. If the youngster is active and strong a sufficient amount of milk may be removed. But it frequently occurs that the calf is weak and unable to obtain sufficient nourishment; in this case the udder becomes overdistended with milk and a normal udder is damaged, perhaps ruined. When mastitis is already present it becomes extremely active under these circumstances. Similar examples are observed at cattle sales and exhibitions. In order to show a large udder the milk is not removed. This is a serious strain upon a healthy udder, and it is disastrous to one that is 10 to 20 per cent defective.

Regardless of the fact that we know little of the habitat of the mastitis streptococcus, and have been unable to follow its wanderings from cow to cow, we do know a great deal about the causes of mastitis and how to prevent their operation.

SYMPTOMS OF MASTITIS

I have mentioned the two chief forms, acute and chronic, and it is with the latter that you are chiefly interested. When fibrosis of the udder becomes somewhat advanced the milk production is lowered; the cow is a short milker and a low producer. It is rare that a high class Holstein with marked fibrosis of the udder will produce ten thousand pounds of milk in a year. One owner recently asked whether I thought he could afford to sell his mastitis cows; from a standpoint of milk production he cannot afford to keep them. Such cows damage the quality and increase the cost.

A second point of great interest to you, and one that the average person is slow to comprehend, is that mastitis is a recurrent disease. When a cow has garget and recovers, the chances are she will have another attack within a year—possibly two or three of them. I once listened to an account of a treatment that had cured one cow eleven times. This difficulty in understanding the nature of the disease is explained by the human tendency to consider disease in cross sections; it seems almost impossible for some minds to comprehend that disease is like a moving picture. To accurately estimate the significance of mastitis, one must consider the past history and the probable future.

I am supposed to discuss the clinical diagnosis of this disease, to tell how it may be recognized, and to explain the symptoms. Keeping in mind that we are dealing with a group of individuals with lowered production and recurrent flare-ups, we are interested in how to identify such individuals. With the numerous laboratory methods of examination of milk, and with our present knowledge of physical examination of the milk and udder, this is not difficult. Doctor Hucker has shown the uniformity of results obtained by means of the physical examination and the laboratory tests. With either or both of these methods there should be no difficulty in estimating the real status of affected herds. Such surveys have not been considered a part of the milk in-

dustry. When the control of mastitis becomes a part of this industry, an enormous saving will be made.

The Clinical Diagnosis.—In the routine examination of a herd, one begins with the **strip cup** shortly before the regular milking period. While this method fails to reveal any except the more active cases, it requires little time, and it readily indicates the quarters in which gargety or flaky milk is present at the time of the examination. When used by the milker at each milking period, it reveals these cases whenever they appear and thus becomes a highly useful part of the examination. The strip-cup test is followed by a chemical examination of the milk—the **color test**, for which the most widely used chemical is a solution of brom thymol blue (thybromol). This is done by adding one-half of a cubic centimeter of the solution (0.25%) to 5 cubic centimeters of milk. To normal milk this gives a yellowish or slightly greenish tinge. Milk from cows with mastitis is usually turned green. This may be light green, green, or dark green according to the activity of the inflammatory process. Absence of a reaction may occur when the mastitis is inactive, but the presence of a definite color change always means mastitis. The change in color is brought about by the alkalinity of the milk. This test should not be applied to cows that are about dry, or that have just freshened, for their milk has a high normal alkaline reaction. It is unsafe to buy cows that are "springing," or that have recently freshened. Their udders are distended to such a degree that the recognition of mastitis is difficult.

The **physical examination** of the udder is preferably made directly after milking when the tissues are relaxed and flaccid. It is then possible to recognize fibrous thickenings or indurations in the udder. When the fibrosis is marked the condition may be readily found, even when the udder is distended. The question has been raised, what is the significance of indurations in the udder? After repeated examinations of the udders in a number of herds, we are of the opinion that the degree of induration is a measure of the dgree of mastitis. According to this principle we classify quarters of udders as (1) normal, (2) suspicious, (3) distinct, and (4) marked. A cow with distinct induration in one or two quarters may still be a good producer. It is probable that an acute attack of a single quarter, resulting in a fibrous indurative swelling, may not progress; the circumscribed firm mass may never enlarge. But in most cases, atrophy of the glandular tissue and replacement with connective tissue continues until the lesions are marked. There is a wide variation in the rate of development of this process, depending somewhat on the circumstances associated with the primary attack—injury or mere contact without injury. This explains the higher percentage of advanced forms in old cows. Do not get the impression that these indurations are of no significance. Conclusions based on a physical examination have usually been confirmed by means of a bacteriological or chemical examination. And the findings of a bacteriological or chemical examination are usually confirmed by means of a physical examination. Once indurations are formed, the condition is permanent; it can always be recognized. But observations with respect to clots in the milk, to colorimetric tests, and to bacteriological examinations are variable; these conditions vary according to the activity of the inflammatory process, yet sufficient evidence usually remains to establish a laboratory diagnosis.

CONTROL OF MASTITIS

Knowledge of clinical diagnosis is of little value unless it can be applied to an effective control of the disease. I believe that control is not difficult in herds recruited from natural additions. It may seem difficult for the reason that little effort has been made in this direction. The first step is to learn the condition of the herd. There are two ways in which this information may be obtained: (1) Rely entirely upon an examination of the milk after it arrives at the factory; this implies an identification only of forms that are advanced or acutely active. (2) Conduct a systematic examination of all cows, require that all marked or distinct forms be segregated or removed from the farm, and that the owner adopt methods of mastitis prevention. It is possible to make an adequate survey by means of a clinical examination conducted in the stable, though conditions that require laboratory assistance will arise. It is a short-sighted policy to merely eliminate cows that are producing damaged or spoiled milk, or inflammatory secretions, and do nothing to prevent the development of such a condition in the healthy individuals. While it seems improbable that mastitis can be entirely eradicated, as we eradicate tuberculosis, we may anticipate relative freedom from heavy loss. The fact that many herds do not contain distinct or marked forms is proof that others may be kept healthy. This may be accomplished by grouping the normal animals in the same line and milking them first. This implies sanitary milking with respect to cleanliness of hands, and a properly bedded stall with sufficient room. From the infected group, the more advanced cases should go to the butcher. It is highly probable that the cow with marked mastitis, subject to frequent acute activity, is the chief source of infection in healthy cows. It may be necessary to wash the hands, or to disinfect the teat cups of milking machines, after each cow is milked. It is also advised that after milking, the ends of the teats be dipped in a mild disinfectant; this removes bacteria that may be left by the milker.

We now have under observation several herds, some of which were 60 to 75 per cent infected, and without exception the spread of the disease has been checked. Replacement with heifers occurs rather rapidly on the average farm. And it is also possible to buy mastitis-free replacements if one examines each purchase carefully and keeps away from herds where the percentage of disease is high.

The Present Situation and Future Outlook in Dairying

By DR. F. P. WEAVER
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A DECLINE of five per cent in the consumption of fluid milk in New York City during the last year, when for the past decade consumption had been increasing annually at the rate of about 4 or 5 per cent, indicates that the present dairy situation is tied up closely with the business situation. Not only is the per capita demand for milk dependent to some extent upon business conditions but the price obtained for milk and the cost of many of the items which enter into milk production are likewise closely associated with movements in the general price level and with the general level of business activity.

In discussing the present situation and outlook it will therefore be necessary to review the status of general business activity as well as the position of the dairy industry in relation to its own cyclical movements.

During the last year Mr. Leonard P. Ayers of the Cleveland Trust Company has supplied the country with an index of business activity from 1790 to the middle of 1931. A comparison of this index with the index of the general price level indicates that the idea that high business activity is necessarily associated with high prices is erroneous. There have been a number of periods in the history of the country when business was in a severe depression while prices were relatively high, and many other periods of low prices when business was booming. Even more significant than this fact is the observation that in most periods of depression business recovery was not brought about by a rise in prices but rather by a reduction in costs of production, which made business possible at the prices which then prevailed. Any rise in prices which accompanied the business recovery did not usually come until six to nine months after the recovery in business began, and sometimes even later. It would seem reasonable to infer that such business recovery as may come in the next year will not be brought on by a fundamental change in prices to a higher level but rather in spite of the low prices.

Another factor in the price situation which is worthy of consideration is the relation of prices to the world monetary gold supply. International trade and commerce are such integral parts of our business set-up that world trade conditions seem to affect vitally the business conditions in our own country. Inasmuch as gold is the only medium which is universally accepted for international payments, even by those countries that are not at present on a gold basis, it is quite evident that prices on a gold basis can not long depart from their normal relationship to the world's supply of gold which is available for monetary uses. It should not be difficult to understand why a surplus supply of monetary gold in this country might be quite impotent in supporting higher prices when other countries with whom we normally trade extensively have supplies of gold inadequate to support a price level that makes it profitable for us to trade with those countries.

The history of English prices over three-quarters of a century, and English prices during that period represent international prices more closely than those of any other country, have followed closely the rate of change in world monetary gold supply, other than during the war. Prices remained at about the same level when gold supply increased 3.1 per cent a year.* When gold increased at a slower rate prices fell, and when gold was increased at a more rapid rate prices rose. Since with the pound sterling off the gold basis the dollar is becoming more and more the basis of international transactions, it is quite probable that the buying power of the dollar will be governed largely by the relative supply of gold in the world. Estimates of world gold production for the next ten years made by the Gold Delegation of the League of Nations Financial Committee indicate that so far as can now be foreseen there will be enough gold by 1940 to support a level of prices approximately only 83 per cent of the level from 1910 to 1914. Unless some unforeseen event changes the trend which seems to have been operative since 1920, the general trend for the next 8 years will probably be downward. This will not mean that prices will decline constantly during that period but rather that such rises as will occur will be less than the declines which may be expected.

A third factor of importance in estimating the outlook for general business activity during the next year is the type of business depression which grips the country at present. A look at Mr. Ayers' chart indicates that after the War of 1812, the Civil War and the World War, the only three wars in which the United States engaged which were financed by inflationary methods, there were violent periods of depression of short duration in 1819, 1865 and 1920. From these depressions recovery was prompt and very rapid because in each case the country was confronted with an acute shortage of houses, office buildings and factories for the manufacture of goods for peace time uses. The demand this created led to periods of industrial prosperity which lasted 8 years after the Civil War period, and 8 years after the World War period. Such a long period of construction inevitably leads to over expansion. This led to the panic of 1873, and a depression which lasted until 1879. No one can predict with safety the end of the depression which set in during 1929, but it seems quite evident that there is much surplus housing and surplus capacity in the factories and office buildings of the country with which the population will have to catch up before another prolonged period of super normal activity is due. This does not mean that there can be no improvement in business until the end of a 5 or 6 year period, but

*Warren and Pearson, Farm Economics, Cornell University, February, 1931.

such recovery as will come will probably be of the character that is due to demands for textiles, automobiles and similar goods which wear out rapidly rather than of the vigorous and prolonged type which comes from extensive construction operations along with busy mills and other factories.

The status of the dairy industry in its own cycle of over and under expansion, which seems to be characteristic of all livestock enterprises, is quite well depicted in the unpublished report of the dairy committee of the Appalachian Outlook Conference held at State College in October. I shall quote quite largely from that report, adding such additional information as will bring it up to date.

"Northeastern dairymen are going into the coming winter with their barns and silos well filled and with the prices of purchased grain the lowest in years. The price of milk is high, relative to most other Northeastern farm products such as potatoes, apples, wheat, etc. In response to these conditions Northeastern dairymen have been increasing their herds and are quite generally planning to keep still more cows next year. In addition to an increase in the number of cows, production per cow in the Northeast on October 1, 1931, was slightly higher than a year ago. With a dairy ration in New York selling at about 20 per cent below pre-war prices and with milk prices fully 20 per cent above pre-war, there is an inclination on the part of dairymen to increase production.

"Milk and cream consumption in the Northeast is still somewhat below normal and with the increased number of cows being milked fluid milk supplies have been ample. So long as the price of grain stays low in comparison with milk, supplies will be substantially in excess of fluid requirements.

"The present indications are that surplus milk, produced in the east in excess of fluid requirements and diverted to manufacturing uses, will soon meet greatly increased competition from western corn belt states. In most of the area from Minnesota to Oklahoma the grain being fedto milk cows is worth only about half as much per pound as that being fed in the east. Consequently, farmers in that section are quite generally planning to keep more milk cows.

"At present, in the butter producing states butterfat is unusually high in price in comparison with grain, and also in comparison with other agricultural products. There is no reason to expect such an unusual and unstable condition to continue for more than a few months. If cheap grain in the central west stimulates butter production, the price of surplus milk in the east can be expected to decline."

That the competition from the cheap grain areas is getting keener is shown by the fact that while production per cow in the North Atlantic States, January 1, 1932, was only one half of a percent above the January 1, 1925-1929 average, in the East North Central States it was 5 per cent above, and in the West North Central States 13 per cent above. In the North Atlantic States dairymen are feeding 9 per

cent less grain than a year ago and getting 8½ per cent less milk. At the same time the hay crop in the Northeastern States in 1931 was about 10 per cent larger than in 1930, and the production of feed grains about 30 per cent larger.

"In view of prospective increases in milk production in the Northeast, and with the price of fluid milk high compared with the prices for other dairy products, and also with consumption reduced, it is probable that fluid milk prices will tend toward lower levels.

"Farmers who are finding a safe margin of profit between the cost of purchased grain and the price they are securing for milk may be able to increase profits by feeding even more intensively so long as present prices hold. They may also find it worth while to keep for a while longer some cows that are past the age of best production, thus avoiding the purchase of new cows to fill what may be only a temporary advantage to convert feed into milk.

"On the other hand, farms everywhere are hard pressed financially and are seeking any opportunity to secure money for living expenses, debts and taxes. Eastern dairymen should face the fact that under these conditions any abnormally high price of dairy products in comparison with grain is a very temporary situation. Also the longer the prices of feed and dairy products are out of line the more violent will be the processes of readjustment. It would be well therefore for eastern dairymen to look ahead and plan their operations so that they can safely weather lower prices if they should come. In general most farmers should be prepared to cull out low producers rather quickly if a severe break in prices eliminate profits from the feeding of purchased grain."

The decline in prices of dairy products from an index of 92 December 15 to 85 on January 15, shows that the opportunity for making money out of low producing cows has probably already passed.

"Apart from the immediate situation which may call for little change at this time, a farmer should realize that these conditions are only temporary. It has been the history of cow prices to decline relative to other things for about 7 years and rise for about the same length of time. The purchasing power of dairy cows reached the last peak in 1929 and has declined rapidly since that time. We may expect this decline to continue for the next few years before again turning upward."

Individual dairymen must choose between the advantages of culling their herds before prices of dairy cows decline still further or of continuing to milk them while the low grain prices and relatively higher milk prices make it possible to derive some profit from feeding cows that will be unprofitable if milk prices go still lower. The dilemma which confronts most dairymen results from the fact that continuing to feed herds large enough to fill stables to capacity is most profitable at present, but this does nothing to correct the perplexing problem which confronts the industry, while the reduction in costs of production to meet the probably still lower prices of milk can only be accomplished by rigid culling and replacement with good cows.

Recent Investigations With Cottonseed Meal and Pasture Improvement

By T. E. WOODWARD
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Washington, D. C.

MANY dairymen have a very definite opinion that cottonseed meal should be fed sparingly if at all. Some avoid it entirely. Cottonseed meal is blamed for various troubles from simple cases of "off feed" to garget and sterility. No doubt the reason for this feeling is because cottonseed meal does contain a substance called gossypol which appears to be poisonous to small laboratory animals such as white rats, to swine and to young calves. Furthermore, there have been cases of mature cattle developing various troubles, as stiffness, oedema, fits, sore eyes, blindness, and even death has occurred in some cases. A study of the reports of such cottonseed meal injury shows that in every case the roughage fed with the cottonseed meal was a very poor quality. In fact, I have been unable to find the report of a single instance of so-called cottonseed meal injury when a decent roughage was fed with the cottonseed meal. Besides, it has been possible to bring about the typical symptoms of cottonseed meal injury by feeding concentrates other than cottonseed meal along with a poor roughage. It appears evident that the troubles encountered with dairy cattle other than with young calves is due to the poor roughage instead of to the cottonseed meal. This view is strengthened by the fact that the symptoms of so-called cottonseed meal injury are similar to those caused by a vitamin A deficiency. And of course it is the roughage rather than the concentrates that provides most of the vitamin A. The only way of which I can think that cottonseed meal got the blame for this vitamin A deficiency was this: In the feeding of cottonseed hulls in the South, the usual concentrate fed with them was and is cottonseed meal. The hulls are almost devoid of vitamin A. When trouble occurred, it was laid to the cottonseed meal instead of to the hulls. There has never been a case of cottonseed meal injury reported in which the roughage consisted of grass or any other green forage or when hay of at least reasonably good color was fed.

Let me give you some of our experiences at Beltsville. Several years ago we set out with the deliberate purpose of making cows sick by feeding them large quantities of cottonseed meal. The idea was to make them sick and then see what treatment was required to cure them and in this way find out what there was about the cottonseed meal that was harmful.

A cow was fed for 3 months at the rate of 10 pounds a day; another at the same rate for 4½ months; another 10 to 16 pounds a day for 14 months; 2 were fed 10 pounds a day for 16 months; 5 were fed 6 pounds a day for 5 months. In none of these cases were there any

bad effects. The cows remained in a good state of flesh and those that were pregnant carried their calves for the full period. All of these cows were fed a good roughage. By this I mean one or more of the following: pasture grass, silage and alfalfa hay. As these cows did not become sick, we fed others a poorer roughage.

Two cows were fed for 4 months on timothy hay and silage along with 10 pounds of cottonseed meal a day; another was fed for 5½ months on timothy hay alone for roughage along with 10 pounds of cottonseed meal; another was fed for 6 months on silage and cottonseed meal. No bad effects were observed with any of these cows.

Then we went a step further. On November 6, 1930 we started feeding 2 cows on a sole ration of wheat straw and cottonseed meal. One of these received and is still receiving 10 pounds of cottonseed meal a day; the other was fed 6 pounds a day for the first few months and 10 pounds a day from then until now. Both of these cows dropped full time calves, one of them 4 months after being started on this ration and the other 6 months after. They have now been fed this ration of wheat-straw and cottonseed meal for more than 14 months. Aside from the fact that these cows did not come in heat regularly after they calved and are not yet pregnant, there has been no definite harmful effect upon their health.

It is realized that much larger amounts of cottonseed were fed than is likely to be advisable in practice. This was done to bring about the so-called cottonseed meal injury. Since large quantities did no harm, it appears that we would be justified in saying that smaller quantities would likewise be harmless. Certainly no dairyman need hesitate to feed as much cottonseed meal as is required to provide the necessary proportion of protein.

In order to see if a high protein ration containing cottonseed meal would cause garget, as is so often claimed, we fed 2 cows for 4 months on 10 pounds of cottonseed meal a day along with all the good alfalfa hay they would clean up. The milk from these 2 cows was examined at frequent intervals for bacteria and leucocytes. This feeding did not increases the numbers of bacteria or leucocytes and there was no outward indication of inflammation.

The results of feeding cottonseed meal to young calves are somewhat different from those with cows. Many years ago we satisfied ourselves that cottonseed meal fed in considerable quantities to young calves would kill them or at least make them sick. However, since interest in this matter has been revived through work at certain state stations we have resumed our experiments.

Four young calves have recently been killed by feeding them cottonseed meal. These calves ate from 26 to 60 pounds of cottonseed meal in the course of their lives and died at ages ranging from 58 to 89 days. These calves had an opportunity to eat good alfalfa hay and they received whole milk until about 3 weeks of age. There was no apparent lack of vitamin A. Furthermore, they did not become stiff and did not develop sore eyes. However, some of them had convulsions a few days before death. The symptoms were not typical of

vitamin A deficiency. Post-mortem examination showed only one condition common to these calves. There was a straw-colored fluid in either or both of the body cavities.

In order to find out whether these fatalities were due to the gossypol in the cottonseed meal, some of the same meal was steamed under pressure to destroy the gossypol. This was fed to four calves. One died, but three are still in a thriving condition although over 4 months old. The one that died ate 80 pounds of the steamed cottonseed meal and lived to the age of 92 days. His twin brother fed the raw cottonseed meal ate 41 pounds and died when 58 days old. The results with these calves leads us to believe that the gossypol was at least partly responsible for the death of the calves fed the raw meal, and our recommendation is to avoid the feeding of cottonseed meal to calves under 3 months of age, although it may be possible to get by with the feeding of very small quantities.

A great deal has been said and written about pastures in recent years so you may be interested in our results at Beltsville.

Our experimental pastures were seeded in fall of 1928 and the spring of 1929. One pasture was divided into 6 equal fields and the cattle were rotated from one field to the other about every 4 days. As soon as the milking cows were taken off a field, young stock was put on and left until the cows were changed to a new field. These fields were fertilized with 400 pounds superphosphate, 100 pounds muriate of potash and 400 pounds nitrate of soda per acre each year. The nitrate was put on in four applications. This method of grazing and the fertilizer treatment is similar to the system developed in Germany in war time. This is called the Hohenheim system and from reports it appears successful in some of the European countries.

To find out the effect of grazing continuously instead of in rotation, another field was fertilized exactly the same, but cattle were on the pasture continuously instead of intermittently.

To find out the effect of fertilization, another field was unfertilized but was grazed continuously.

In the season of 1929 the pastures were not yet well established and in 1930 the drought struck us so 1931 was the first year in which we have been able to make good comparisons of the different pastures.

The cows used were mostly grade Holsteins. They gave an average for the season of 26 to 34 pounds of milk a day on the different pastures and from 1.0 to 1.2 pounds of butterfat. The quantities of supplementary feed given depended upon the condition of both the cows and the pasture. For the first month, grain was given only to the cows that were producing more than one pound of butterfat a day. Later, as the cows began to decline in milk and fall off in flesh and the pastures were not so abundant and tender, supplementary feed was given to cows producing as little as 10 pounds of milk. Still later after good rains and cooler weather in August the supplementary feed was reduced. The grazing season lasted from April 28 to October 11.

The number of cow days per acre on the fertilized, rotation-grazed field was 120 and the milk produced, 4081; comparable figures

for the fertilized, continuously-grazed field were 108 cow days and 2819 pounds of milk; while on the unfertilized, continuously-grazed field there were 77 cow days and 2309 pounds of milk. These results were put on a comparable basis by estimating the digestible nutrients which the cows and heifers got from the different pastures. The fertilized, rotation-grazed field produced 2565 pounds digestible nutrients, the fertilized, continuously-grazed field, 2083 pounds, and the unfertilized, continuously-grazed field, 1634 pounds.

Now let us see if the grazing in rotation paid. The cattle got 482 pounds or 23 per cent more digestible nutrients from the rotation-grazed pasture than they did from the continuously-grazed pasture; 482 pounds of digestible nutrients would be contained in 934 pounds of alfalfa hay. Will 934 pounds of hay per acre a year pay for the expense of dividing the pasture into fields? In most cases I should say that it would.

Did the application of fertilizer pay? The cattle on the fertilized field obtained 449 pounds more digestible nutrients than they did on the unfertilized field; 449 pounds digestible nutrients would be contained in 870 pounds of alfalfa hay. The fertilizer cost $11.77 an acre. If alfalfa could be bought for $27.06 a ton, a person would just as well have bought hay as fertilizer. A price cheaper than $27.06 would be to the advantage of buying the hay; a price higher than this to the advantage of buying fertilizer.

Now it is not the intent of this discussion to depreciate the value of fertilization as it is well known that in most cases a fertile soil is a prerequisite to profitable farming. Still it seems to me that indiscriminate use of fertilizer is to be avoided. The wisdom of applying large quantities of expensive, nitrogenous fertilizer may well be questioned as this has only a short-time effect and that only in the presence of considerable moisture.

No one can deny that good pasture providdes a good feed. It stimulates the milk flow, it is palatable, it has plenty of protein, and it contains minerals in a usable form. In spite of this, I am of the opinion that the value of pasture is overrated and that too much dependence is placed upon it. This is what happens at Beltsville. The cows are turned on the pasture when the grass is tender and abundant and when the weather is cool. They come back from the pastures with full stomachs, their milk flow increases. This lasts for about a month. Then the grass gets tougher and the weather gets hotter. The cows stand around instead of grazing, the milk flow declines rapidly and the cows lose weight. Certain cows used in our pasture experiments the past year calved a month or two before turned on pasture in the spring. They declined from an average of 51 pounds of milk a day to 23 pounds during the pasture period of 150 days in spite of their being given considerable supplementary feed. This is almost twice the decline that we would expect in the winter. Until we learn how to manage and feed our cows so that the milk flow will be maintained in the summer, the use of pasture, at least under the conditions prevailing at the Beltsville station, must remain somewhat unsatisfactory.

Service Work For Agriculture In The National Capital*

By CHARLES W. HOLMAN, Secretary
The National Cooperative Milk Producers Association

THE annual income of agricultural products was approximately $6,920,000,000 in 1921. The year before the value was approximately $9,300,000,000. Some one has said that this annual income constitutes considerably less than 9 per cent of the total income of all classes in the United States, and the remaining 91 per cent is fairly well represented in the national capital by several hundred trade associations, labor organizations and special offices. Some of these offices are extensively equipped with secretaries, statisticians, attorneys and clerical help. One organization owns and occupies a magnificent office building; it has a large staff and an annual budget of about a million dollars. Another of different type occupies all of the space in a nine-story office building. These, of course, are exceptionally large organizations. The average office is not so extensively manned or equipped, but some industries spend considerable sums of money in the employment of high salaried representatives and attorneys.

MODERN BEGINNINGS OF REPRESENTATION AT WASHINGTON

In contrast, agriculture has a very limited representation. Representation as we now know it began in the first year of the World War (1917) with the formation of the National Board of Farm Organizations. This step was the result of a keen appreciation of the disadvantageous position of agricultural organizations in their relation to the Government in connection with problems arising from the conduct of the World War. It was an attempt to set up an instrument which existing general farm organizations and cooperatives could utilize as a means of working together in matters where there was common agreement. This organization for some years was quite active and had a full-time secretary. It also sponsored the purchase of a building in Washington to be used as headquarters for such organizations as desired to be housed under the same roof. This building is known as the Temple of Agriculture. Of late years this organization has not been very active.

A short time after the formation of the National Board of Farm Organizations, the National Grange created an office for a Washington representative. This office was manned by the representative, a part-time assistant and one secretary.

Early in 1920, the National Milk Producers' Federation* opened a permanent national office in Washington. Previously the Federation's

*Later this organization changed its name to the National Cooperative Milk Producers' Federation.

Washington contacts had been through the National Board of Farm Organizations supplemented by the occasional presence in Washington of special committees and the president of the Federation.

In 1920 the newly formed American Farm Bureau Federation opened an office in Washington and stationed a representative there.

In 1922 a group of commodity cooperative associations, nearly all of which had been organized on the Sapiro plan, federated into an organization known as the National Council of Farmers' Cooperative Marketing Associations. This organization at first established headquarters in Chicago but had a Washington representative. In 1923 the national office was moved to Washington. It was active in a number of legislative undertakings and contacts with the Federal Government until the organization dissolved as a result of internal differences.

Since its origin approximately a quarter of a century ago, the Farmers' Educational and Cooperative Union of America has maintained intimate contact with Washington but has never stationed a representative permanently in the capital. Its president, however, has spent a great deal of his time in the city. The permanent representation of the Farmers' Union at the capital was through its connection with the National Board of Farm Organizations. The same was true of the Farmers' Equity Union and the Pennsylvania State Grange, which for many years spoke through the National Board of Farm Organizations.

About two years ago a number of commodity cooperative groups completed organization of the National Cooperative Council and established its offices also in Washington, D. C. Among these groups is our National Federation. Through the Council we clear with such other groups as the American Cotton Cooperative Association, the California cooperatives, the Pacific Egg Producers, and the National Wool Marketing Corporation. The council now represents a clearing house of cooperative organizations with a farmer membership aggregating over a million.

Other cooperative associations maintain a form of representation through their contacts with Washington law firms which follow and report to these organizations on matters connected with their interests.

THE DUTIES OF A REPRESENTATIVE

The duties of the Washington representative divide naturally into: (1) informational service in response to letters or telegrams; (2) regular or special service bulletins carrying information back to member organizations; (3) contacts with government officials for purpose of securing information; and (4) legislative activities.

The first three are relatively simple but involve a considerable amount of work. For example, the correspondence of a Washington representative is of such a character that almost every letter has to be made the subject of a special investigation before it can be answered. As a rule no two letters cover the same subject. It may require a half dozen telephone calls or a number of personal calls to get in-

formation which may be covered in a half-page letter. The representative must, of course, be familiar with sources of information. He must know and have a friendly relationship with individuals in the various departments who are authorities on particular subjects, otherwise he may experience much trouble in securing facts or informal interpretations of regulations.

The fourth duty is one popularly known as "lobbying." It is less understood; it is indeed more complicated and it has a technique all its own.

Out of the vast vortex of Congressional bills, always a certain number directly affect agriculture. The Washington representative must keep in touch with the committees to which such bills are referred and promptly advise his organization leaders as to the contents of such bills. He must do more. There is a large amount of legislation which may not directly interest his organization, but may have an important indirect bearing on its problems. He must also keep on the look-out for so-called innocent-looking "jokers" inserted in bills which are really directed against agriculture or might render unconstitutional some previous legislation passed in favor of an agricultural group. In itself this is a rather large job; for in the course of the average Congress about 15,000 bills are introduced. Of course, most of those bills are what we call "private bills," such as pensions, claims for damages and bills providing for the erection of bridges, public buildings, etc. But a very considerable number belong in the category of public bills, and usually a hundred or more in each Congress may be said to affect the agricultural interest.

THE AVERAGE BILL HAS LITTLE CHANCE TO PASS

We must remember that each session of the Congress must devote itself to the consideration of the regular supply of bills which finance the operation of the executive branches of the Government. Consideration of these bills is almost enough to keep the Congress busy without devoting itself to other legislation. Then there are the bills which each year have strong administration backing; bills which are introduced to carry out recommendations of the President. In consequence most of the bills introduced by the Congressmen are never heard of except in the districts from which come the individual congressmen who see to it that the local press know about their activities.

The bills that have a chance to pass are those which the administration is determined shall be pressed and such bills as gain public attention as a result of either "high-light" debate in the Congress or industry propaganda. I think I am conservative when I say that no matter how important a bill may be unless it has either administration backing or aggressive and organized outside support, it will have a hard time getting through both houses of Congress. This statement will be more easily understood if we trace the procedure by which a bill is passed.

The average bill referred to a committee reposes in peace in the committee files and is forgotten. If, however, a strongly organized

group desires the legislation, the committee will arrange for a hearing. If considerable opposition is manifested against the bill at the hearing, it may not be reported for months, or it may be killed.

WHAT HAPPENS TO A FAVORED BILL

If, on the other hand, its supporters are aggressive and have been forehanded enough to create a favorable public opinion for the measure, it may be reported. In that case it will probably go on the union calendar of the House. Then, on the day of the week when the House considers the bills from that particular committee, the name and number of the bill will be read aloud by the clerk, and if there is no objection, the bill is passed. If there is objection, as usually there is, the bill goes over on the union calendar to await the decision of the Rules Committee of the House as to whether it is important enough to be allowed a chance to pass.

Meantime another committee—a very important committee—may give this bill some consideration; it is the Steering Committee of the dominant party. If the Steering Committee decides that the bill is worthy, that decision is equivalent to making the bill a semi-administration measure and is of great advantage. On the other hand, the Steering Committee may not be for the Bill but may be cognizant of a great demand for it and it may determine to give the bill a chance for that reason.

Next comes the task of securing a favorable action by the Rules Committee which determines what bills can be voted on and when the House may consider them. The Rules Committee is made up of leaders of both parties with the dominant party having a majority of members. It is customary for the Rules Committee to hold hearings, but only members of Congress go before it. If the original committee to which the bill has been referred is strongly "for the measure," the chairman of that committee and one or two of his colleagues go before the Rules Committee and argue the importance of the bill and to ask for a "rule" as to when the bill may be taken up and the amount of time that can be allotted to its consideration. The opponents on the same committee also appear and argue against the bill.

If a "rule" is denied, the bill may die. If a "rule" is allowed then the bill comes before the Lower House either on a definite date or it is given an order; that is to say, it may be made the second, third, fourth, fifth or sixth bill to be considered.

Finally comes the consideration of the bill by the House sitting as a committee of the whole House on the State of the Union. In that debate the bill is perfected by amendments offered on the floor, if any, or the bill may be defeated in committee. If defeated, one is "through." If it is reported by the House in "committee of the whole" to the House sitting as the House of Representatives, a final vote determines the fate of the legislation.

In the Senate the procedure is somewhat different. The bill will have a hearing by a committee. It will then be on the calendar, but an adroit floor leader can advance the relative position of the bill by

various means so that it may soon get to a place where it can be considered the order of business of the Senate. Generally the Senate will reach an agreement on the floor as to the order in which particular bills may be taken up.

SUGGESTIONS FOR THE NOVICE

The progress of a bill is necessarily slow and tedious; but that is not entirely a disadvantage; for Congress should consider carefully and without haste any legislation worthy of its consideration. It often happens, however, that two years may elapse before a bill is finally enacted into law. I know of one very important agricultural bill which our organization was advocating that took nearly four years to pass. It passed the Lower House twice but was held up by a critical subcommittee in the Senate. Experience in handling legislation leads one to devise these somewhat simple rules:

1. It is very important for an organization to select the right type of man in each House to foster the legislation. It is an advantage for the sponsor in the Lower House to come from a different section than the sponsor in the Upper House. But this plan is not always essential. It is, however, essential to take into consideration the relative state of sentiment in both Houses with regard to the selection of sponsors. If, for example, there is a dominant majority party in the Lower House, it is better to make the contact with a congressman who has the confidence of the party leaders in control. It is also desirable, but not entirely necessary, for this congressman to be a member of the committee to which the bill will be referred. If the same condition prevails in the Senate, as it rarely does these days, a similar procedure would be in order. On the other hand, if there should be a "bloc" situation with which to deal, then the problem of selecting a Senator "boils down" largely to the personal equation. If possible, he should be a man who has the confidence and respect of all "blocs."

2. Under normal conditions of party control, it is highly essential to have the active support of the ruling administration, and, if one cannot get its active support, at least to have the acquiescence of the administration leaders.

3. The next important matter is the organization of evidence. This is very important and merits considerable attention. During the last decade a great many changes have occurred in the methods of presenting evidence to committees. The untrained witness generally makes a "speech," and contributes few new facts. He may, however, convey to the committee a distinct impression of the "feeling" of the community or organization which authorized him to appear.

Now, here is the point: there is a vast difference between "feeling" and "thinking"; there is a vast difference between expressing opinions and presenting facts. On each committee of the Congress are veterans who year after year have heard hundreds of representatives of agricultural organizations and individual farmers detail their woes, their problems and their opinions. These veterans have also heard expert testimony presented by economists, and have had access

to confidential information drawn by them from executive branches of the government. They cannot be moved under ordinary circumstances by emotional outbursts; but their interest is always intrigued by the forceful presentation of real facts; and they are always anxious to gauge the extent and the intensity of any organized desire.

A NEW METHOD OF PRESENTING EVIDENCE

Recognizing this situation and its demands, the National Cooperative Milk Producers' Federation has adopted this procedure in presenting evidence: We first find out whether we are right. In economic questions there is just one way to find out: it is to employ the best research specialists one can find to make unbiased studies of the problem.

Having ascertained the facts and feeling justified in presenting them, the next job is to select witnesses. The practice of our Federation for years has been to draw our witnesses from representatives of organizations which are member of the Federation, these witnesses to act in conjunction with the Washington representative.

Some committees permit the opposing sides to question each other. This praceice is more general in the Senate than in the Lower House. It is obviously necessary to exercise care that this privilege is not abused by injecting questions which would indicate personal hostility or antagonism.

With the hearings over, and, let us say, a favorable report on the bill with amendments by that committee, the next task is to be sure there is enough support in the Congress to pass the legislation. Here is, after all, the supreme task. Sometimes an agricultural organization will have arrayed against it powerful and highly financed lobbies who work by the "gum-shoe" or subterranean method of indirect propaganda. Also the agricultural representation in the Lower House gets smaller as time goes on and villages grow into towns and towns into cities. The urbanization of America means that an increased percentage of people are viewing with none too friendly eyes the efforts of agriculturists to find for themselves equality with other industries. It is very likely that the organizations most bent upon defeating one's legislative plans have not made public appearance against the bill. For weeks and perhaps months they will have the advantage of working against one before he discovers that they have been active. As long as their activities are concealed, it is very difficuit to offset their propaganda.

FARM REPRESENTATIVES SHOULD "GO IN THE FRONT DOOR"

But an agricultural organization has everything to gain by the "front door" method even though some of its enemies may try to use the "back door." Public discussions, consideration of this legislation at local meetings, around the fireside, and even by radio, all contribute toward the advancement of the farmer's cause at Washington. For it is almost axiomatic that an authorized representtive of a bona fide gricultural organization is received by the responsible leaders of the

Congress as an advisor rather than as a "lobbyist," and it is axiomatic that the agricultural welfare is so closely identified with the national prosperity that bills to benefit agriculture do not come within the ordinary conception of "class legislation." However, if the bill is of such a character that the agricultural industry is pitted against another industry, it is not always advisable to attempt to rush the bill immediately on the floor of either house. Discussion in the country districts and the building of friendly alliances with other organizations of agriculture and even of towns and cities is of benefit to a good cause. Congressmen are very alert to changes in public opinion and are particularly sensitive to the growth of opinion for or against any legislation. Perhaps the puzzling point is to know just when to press for a vote. In this, one must be guided partly by the advice of one's friends in each House and also by such information as one may be able to gather at first hand or through correspondence which farm organization leaders in the field are conducting with their particular congressmen.

DO NOT SCATTER ENERGY

Finally, a word of caution against any organization or group of allied organizations attempting to do too much at one time. There is danger in the scattering of energy. The National Cooperative Milk Producers' Federation rarely ever has more than one major project at a time with respect to legislation.

I have outlined some of the principal problems of representation. I have also pointed out the extent to which some of our major agricultural commodities have been integrated on a national scale. I have shown, I hope, that there is need for closer working relations among these groups. It is my belief that the cooperatives of this country are entering a new period wherein the problems of the past will be infinitesimal as compared with problems of the near future. If there is to be order instead of disorder, if there is to be efficient focusing of our common strength instead of inefficient scattering of energies, it is necessary for some agency to act as a clearing house for commodity organization policies and an instrument to carry out the common will of the cooperative membership. We now have such an agency in the National Cooperative Council. In time we hope to develop this Council into an effective and vigorous agency serving us on all matters wherein the respective commodity groups have a common interest.

Annual Business Meeting

The annual business meeting of the Pennsylvania Dairymen's Association was held on January 21, 1932, in Room F, State Show Building, Harrisburg, Pennsylvania, President Robert F. Brinton, presiding.

The minutes of the preceding meeting were read by Secretary R. H. Olmstead and were approved.

The Treasurer's report showed a balance of $60.91.

The Resolutions Committee presented the following resolutions which were approved and presented to the proper authorities:

RESOLUTIONS—1932

WHEREAS: Contagious abortion is becoming a great menace to the dairymen of Pennsylvania, and

WHEREAS: Many of the neighboring states now have regulations protecting their dairymen against the introduction of contagious abortion through the importation of cattle from other states; now, therefore, be it

RESOLVED: That the Pennsylvania Dairymen's Association requests the Secretary of Agriculture that he take all the necessary steps to protect the dairymen of Pennsylvania against the introduction of contagious abortion through the importation of cattle from herds in other states that are not periodically blood-tested.

WHEREAS: At times in the past there have been differences among the three largest milk marketing associations doing business in Pennsylvania as to the best methods of serving the dairymen of this state; therefore be it

RESOLVED: That a committee from the Pennsylvania Dairymen's Association be appointed whose duty it will be to harmonize as far as possible the very important activities of these associations.

WHEREAS: The judging arena is too small to accommodate all the activities that are held in the arena, be it

RESOLVED: That the Pennsylvania Dairymen's Association requests the Show Commission to give consideration to providing other space for activities that are held at the time of the showing and exhibiting of live stock.

The nominating committee nominated the following persons to fill the various offices for the ensuing year:

President—Dr. E. S. Deubler_____Narberth, Pa.
First Vice President—Geo. W. Slocum_____Milton, Pa.
Second Vice President—Albert B. Craig_____Sewickley, Pa.
Third Vice President—J. A. Poorbaugh_____York, Pa.
Secretary-Treasurer—C. R. Gearhart____State College, Pa.
Assistant Secretary—F. M. Twining_____Philadelphia, Pa.

There being nc other nominations the secretary was instructed to cast a ballot for the nominees and they were declared elected.

There being no further business, the meeting adjourned and the educational program continued.

SEVENTH ANNUAL BANQUET

Pennsylvania Dairymen's Association

Masonic Temple

HARRISBURG, PA.

Wednesday, January 20, 1932

R. H. OLMSTEAD, Toastmaster

ADDRESSES BY

HON. GIFFORD PINCHOT
Governor of Pennsylvania

HON. JOHN A. McSPARREN
Secretary of Agriculture of Pennsylvania

CHARLES W. HOLMAN
Secretary of National Milk Producers Federation

HERD TEST AWARDS
C. R. Gearhart, Pennsylvania State College

MILK AWARDS
D. H. Bailey, Pennsylvania State College

ENTERTAINMENT
Jimmy Loughran and His Entertainers

MERIT AWARDS

Presented at the Banquet

Trophies awarded at the Pennsylvania Dairymen's Association banquet, January 20, 1932, in Dairy Herd Improvement Association work, Herd Test work, and Register of Merit work.

HOLSTEIN

A loving cup awarded by the Pennsylvania Federation of Holstein Clubs to the high D. H. I. A. herd; H. A. Snyder, Montoursville, Lycoming county, Pennsylvania. Number of cows 17.78, pounds of milk 15,004, and pounds of fat 547.0.

JERSEYS

Awarded by the Pennsylvania Jersey Cattle Club, one loving cup to the high D. H. I. A. herd: Mercer Sanitarium, Mercer, Mercer county, Pennsylvania. Number of cows, 14.04; pounds of milk 9290; and pounds of fat, 504.

A loving cup to the high D. H. I. A. cow, "Cowslip," 725569, Registered Jersey, 5-year-old, 11,699 pounds of milk, and 666.5 pounds of butterfat, owned by Robert Bamford & Son, Midway, Washington county, Pennsylvania.

A loving cup to high Register of Merit cow: "ButterBoy's Fair Buttercup," 647098, registered Jersey, 5 years; pounds of milk, 17,012; pounds of fat, 786.27; owned by The Pennsylvania State College, State College, Pennsylvania.

GUERNSEY

The Pennsylvania Guernsey Breeders' Association awarded a loving cup to the high registered Guernsey herd in D. H. I. A. work to Dundee Farms, Sewickley, Allegheny county, Pennsylvania: Owner, Miss Eleanor Chalfont; Manager, S. C. Beeman; Number of cows, 5.82; pounds of milk, 9577; pounds of fat, 479.0.

AYRSHIRE

Awarded by the National Ayrshire Breeders' Association, a trophy to the high herd in the Ayrshire Herd Test: Sycamore Farms, Douglassville, Berks county, Pennsylvania. Owner, Mrs. E. R. Fritsche; Manager, B. D. Harvey; number of cows, 38; pounds of milk, 10,082; pounds of fat, 417.0.

Trophy to the second high herd in the Ayrshire Herd Test: Penhurst Farm, Narberth, Montgomery county, Pennsylvania. Owner, Percival Roberts, Jr.; Manager, Dr. E. S. Deubler. Number of cows, 117; pounds of milk, 9201; pounds of fat, 375.0.

High herd in D. H. I. A. work: Robert W. Eno, Honesdale, R. 1, Wayne county, Pennsylvania. Number of cows, 23.87; pounds of milk, 9043; pounds of fat, 408.3.

BROWN SWISS

The Pennsylvania Brown Swiss Association gave no trophy this year, but instructed their officers to provide a trophy for the high herd in 1933 and diplomas for all herds over 400 pounds of butterfat, and diplomas for owners of proved sires. The high herd in 1931 was Oscar Brouse, Mifflinburg, Union county, Pennsylvania. Number of cows, 8.98; pounds of milk, 11,416; pounds of fat, 445.3.

THE MILK SHOW

The milk show awarded 173 prizes this year besides 47 certificates of merit for milk scoring over 95.9. Special awards for high scores were as follows:

By the Philadelphia Dairy Council, a silver milk pitcher, to Ira Shank, of Waynesboro, milk score 97.4.

By the Pittsburgh Dairy Council, a silver milk pitcher, to R. L. Boucher, of Clymer, milk score 96.8.

By the Eastern Guernsey Breeders' Association, a silver cream pitcher, to L. R. Hourdequin, of Avondale, whose milk from a registered Guernsey herd scored 97.3.

By the Eastern Guernsey Breeders' Association, a silver cream pitcher, to Earnest E. Ritter, of Winfield, whose milk from a grade Guernsey herd scored 98.0.

By the Pennsylvania Jersey Breeders' Association, a silver loving cup, to John P. Connell, of West Grove, milk score 97.1.

By the Pennsylvania Federation of Holstein Friesian Clubs, a silver pitcher, to Joel Buckwalter, of Bareville, milk score 98.2.

By the Pennsylvania Ayrshire Breeders' Association, a silver pitcher, to Jacob Horst, of Bareville, milk score 95.3.

Dairy Herd Improvement Association Herd Honor Roll, 1931

Each Dairy Herd Improvement Association member whose herd average production was 300 pounds or more of butterfat during 1931 was placed on the honor roll and given a prize ribbon. One thousand and twenty-five herds qualified for this honor. The awards were divided into three groups according to amount of production: 616 red ribbons were awarded for herd averages between 300 and 350 pounds of butterfat; 305 blue ribbons for averages between 350 and 400 pounds of butterfat; and 104 purple ribbons for averages above 400 pounds of butterfat. Six herds made an average above 500 pounds of butterfat. Following is a list of these members arranged according to association membership and production average:

ADAMS COUNTY—(Adams Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
T. N. Cashman	York Springs	10.75	RH	14645	482.6
A. B. C. Williams	York Springs	7.04	RH	12836	440.5
R. M. Spangler	Gettysburg, R 7	8.82	R:GH	12697	419.0
John C. Bream	Gettysburg, R 4	10.39	RH	11161	390.2
Edgar H. Leer	York Springs	14.99	R:GH	10054	356.2
S. F. Gephart	East Berlin	7.00	Mixed	9619	354.6
George E. Motter	Littlestown	21.94	R:GH	10121	347.4
Hiram Miller	Fairfield	9.17	RH	9500	336.4
Edgar Weaner	Gettysburg, R 7	12.84		8844	306.3

ALLEGHENY COUNTY—(Allegheny Association)

Farmhill Dairy	Sewickley	10.95	RG:GJ	9347	481.1
Dundee Farm	Sewickley	5.82	RG	9577	479.0
J. F. Byers	Sewickley	5.80	RG	8667	433.8
Robt. Bamford & Son	Midway	21.54	RJ	7967	415.9
Arnold Farm	Clinton	6.51	RG	7629	387.4
Fairacres Farm	Sewickley	13.17	RG	7839	384.6
Allegheny Co. Home	Woodville	91.88	RH	10525	368.9
R. M. Donaldson	Midway, R 2	19.16	RH	8984	361.1
Bell Brothers	Imperial	16.84	RH	10758	353.6
Joseph Windsheimer	McDonald	21.34	R:GH	9976	347.0
Guy McWreath	McDonald	18.40	RH	10203	333.2
Craola Farm, Inc.	Clinton	11.32	RH	9367	321.8
Newsome Feed & Grain Co.	Coraopolis	13.83	Mixed	7799	315.2
Vance H. Bell	Imperial, R 2	20.86	P:GJ	5665	301.8
J. H. Wilson & Sons	Clinton	10.42	RH	8720	301.1

ALLEGHENY COUNTY—(Elizabeth Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
E. B. Douglass	Elizabeth	5.98	RH:RG	8505	348.0
J. D. Guffey	Elizabeth	17.49	RH	10854	339.3
Allegheny County Workhouse	Blawnox	29.73	GJ	6596	338.1
J. W. McKinney	Elizabeth	15.99	RH:RG	8623	337.9
Sam Warren	Elizabeth	14.96	RG:RH	8395	329.5
R. A. Johnston	Bentleyville	12.12	R:GH:Mix	8291	308.9
Carl Heath	Elizabeth	15.29	R:GH:GG	8016	302.6

ARMSTRONG COUNTY—(Armstrong No. 1)

J. W. McIntyre	Dayton, R 3	14.79	R:GJ	7328	371.8
Audley Hileman	Ford City, R 1	14.00	R:GH	10292	359.2
J. M. Reed	Kittanning, R 3	34.78	R:GG:Mix	8047	356.5
Frank Bowser	Worthington, R 1	12.75	R:GH	10019	356.3
J. T. Iseman	Ford City, R 1	14.12	P:GH	9918	352.6
Harry Koenig	Tarentum, R 1	16.15	RH	10289	337.9
Paul Heilman	Kittanning, R 1	14.32	Mixed	8688	335.7
H. S. Hogg	Worthington, R 2	12.18	Mixed	7893	326.6
R. C. Stokes	Freeport, R 1	9.60	RH	9668	325.1
R. D. Marshall	Byer	38.46	R:GH	9381	323.5
C. B. McNees & J. T. Shaffer	Kittanning	7.15	RG	6495	319.4
A. K. Shaffer	New Bethlehem, R 4	7.71	R:GG	6981	318.9

BEDFORD COUNTY—(Bedford Association)

Fred W. Coxe	Everett	20.72	RJ	7710	406.2
Allen Eshelman	Everett	16.58	RJ	8068	396.7
Paul W. Koontz	Bedford, RD	11.85	R:GJ	6898	394.2
Falkland Stock Farm	Schellburg	26.60	RJ	7025	386.2
W. E. Barrett	Woodbury	11.66	R:GJ:GG	7630	375.6
Carl W. Garland	Buffalo Mills	14.50	RH	10110	374.9
McKinley Woy	Everett, RD	8.25	R:GG	7337	372.5
C. E. Koontz & Son	Lutzville	13.96	R:GJ	7055	370.4
Stanley Koontz	Bedford, R 4	26.05	RJ	6734	356.0
Harry Clark	Breezewood	10.72	R:GJ	6826	348.5
W. D. Koontz	Lutzville	9.22	RH	10163	347.2
Samuel Cessna	Bedford, R 4	19.01	RH	10299	340.0
C. E. Llewellyn	Midland, Md.	18.84	R:GH	8865	309.3
C. H. Detwiler	Woodbury	7.24	R:GG	7164	308.6
Paul B. Stayer	Woodbury	10.75	Mixed	7691	308.2
J. T. Oliver	Everett	25.88	Mixed	7039	302.6

BERKS COUNTY—(Northern Berks Association)

Harry Anthony	Strausstown	18.99	R:GH	10916	347.0
David Moll	Hamburg	22.02	R:GH	10301	342.6
Ray DeLong	Bowers	24.79	RG	6857	335.4
Harvey Merkel	Kutztown	13.07	RH	10544	330.1
W. J. George	Lenhartsville	15.76	RH	10239	329.3
S. A. Berger	Hamburg	11.76	RH	9771	328.8
George Hamm	Kempton, R 2	14.60	R:GH	10461	324.2
Paul R. Kohler	Hamburg, R 2	17.17	RH	9733	318.5
F. M. Brown Sons	Birdsboro	25.32	RH	9592	311.0
Clarence Dietrich	Kutztown	11.67	R:GH	9937	305.7

BERKS COUNTY—(Central Berks Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Harvey Mathias	Barnville, R 2	11.68	R:GH	10417	377.4
Walter A. Spatz	Bernville	15.08	R:GH	9677	339.4
Adam Faust	West Leesport	12.25	GH	8302	303.7

BERKS COUNTY—(Western Berks Association)

Anthony Bunisk	Oley	25.41	R:GH	11892	411.0
Paul Degler	Sinking Springs	35.00	RH	11467	394.9
Charles Ritzman	Sinking Springs	21.38	R:GH	11341	386.7
Charles A. Riegel	Sinking Springs	27.05	R:GH	11015	380.2
John H. Vogt	Reading, R 1	24.85	R:GJ	6711	371.2
State Hospital	Warnersville	59.87	GH	10323	358.6
Charles Keener, Jr.	Sinking Springs	17.47	R:GH	10723	357.1
Jonathan Bickel	Myerstown	11.33	RH	9723	339.0
Orphans' Home	Womelsdorf	11.69	R:GH	10245	327.3
Harry Stoudt	Bernville	17.61	GH	8832	314.2
Tulpehocken Farms	Sinking Springs	16.61	GH	9598	310.3
Charles Bender	Bernville	11.58	RH	9045	308.6
L. G. Schaum	Womelsdorf	5.83	R:GH	9530	301.9

BLAIR COUNTY—(Blair Association)

Emory Sollenberger	Williamsburg, RD	7.56	R:GH:J	11938	447.4
K. S. Bagshaw	Hollidaysburg, RD	12.73	RBS	9397	377.6
Preston C. Smith	Martinsburg, RD	10.18	R:GH	10032	365.1
G. Clair Smith	Martinsburg, RD	15.81	R:GH	9473	353.2
Alva Long	Portage, RD	16.85	RG	7207	350.0
J. M. Delozier	Hollidaysburg, RD	11.16	RBS	8636	348.3
M. C. Bagshaw	Hollidaysburg, RD	13.68	R:GBS	8253	335.5
John Lloyd, Jr.	Hollidaysburg, RD	33.29	R:GG	6573	327.9
C. Elvin Kensinger	Martinsburg, RD	5.94	GG:Mix	7144	325.6
Clarence B. Metzler	Martinsburg, RD	15.35	Mixed	8689	312.7
D. O. Fouse	Williamsburg, RD	9.59	Mixed	7156	302.4

BRADFORD COUNTY—(Troy Association)

H. H. Packard	Alba	10.65	RH	11265	393.0
B. J. Parmenter	Columbia X Roads	10.79	RH	10763	366.9
Ben Ballard & Son	Troy	19.93	RH	10563	345.9
Glenn Noble	Gillett	28.12	GJ	5970	325.7
Harold Roy	Gillett	12.76		6371	320.1
Lloyd Wolfe & Son	Troy	8.76	RJ	5889	314.4
A. W. Wood	Milan	17.22	R:GG	6525	309.6
H. P. Wilcox	Milan	14.46	Mixed	6361	306.7
Elery Beach & Son	Columbia X Roads	11.67	RH	8372	305.3
John Lewis	Gillett	11.29	R:GJ	6023	304.9
Zachariah Roy	Gillett	8.89	GG	6447	304.7

BRADFORD COUNTY—(Ulster Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
L. A. Harris	Milan	9.44	RJ	7260	412.7
G. E. Harris	Milan	11.58	RJ	7046	376.7
M. R. & A. B. Humpton	Milan	9.99	R:GJ:GH	7235	357.8
Geo. C. Smith	Ulster	14.10	R:GH	9807	345.6
G. E. Ballentine	Milan	11.18	RJ	6638	345.4
F. O. Wright	Milan	22.24	R:GJ	6589	339.4
C. J. Breese	Ulster	10.00	RJ	6255	332.9
F. R. Elsbree	Milan	9.72	R:GJ	6137	328.1

BRADFORD COUNTY—(Canton Association)

R. G. Williams & Sons	Canton	10.79	RH	12188	433.0
Samuel Isaacs & Sons	Canton	16.53	R:GH	10886	384.0
W. F. Bohlayer	Canton	14.11	RH	9388	369.8
H. S. Wilcox & John Brakeman	Canton	16.03	GG	7276	367.4
Niles Packard	Canton	9.81	R:GH	9729	367.4
Emmer Pepper	Granville Summit	13.62	R:GH	9967	351.9
T. M. Watts	Canton	20.18	R:GH	8861	334.5
Clarence Spencer	Canton	17.10	GH	8801	328.5
R. H. Fleming	Alba	25.38	RH	9026	326.2
Geo. B. Shepard	Canton	6.66	RH	8817	318.0
Charles Bedford	Canton	16.70	Mixed	7317	306.2
J. C. Fleming	Granville Summit	10.96	R:GG	6243	303.4
Dillon Stone	Canton	18.16	GH:GJ	7262	300.0

BRADFORD COUNTY—(Laurel Hill Association)

R. B. Arnold	Milan	27.40	RH	13465	485.7
Irving Macaffee	Milan	9.78	R:GH	12784	460.2
Wm. L. Pruyne	Milan	23.44	RH	10434	380.2
I. P. Chaffee	Towanda	17.64	R:GJ	6857	374.9
F. W. Gorham	Wysox	13.70	RH	10339	367.7
G. A. Bailey & Son	Powell	19.91	RH	10211	362.5
Chas. S. Chaffee	Ulster	19.10	RH	9594	357.1
Fox Chase Farms	Towanda	78.34	R:GH:GJ	9147	343.6
D. E. Tracy	Troy	6.37	R:GJ	6233	333.1
J. E. Meredith	Towanda (Farm 2)	28.49	RH	9273	317.6
A. E. Madigan	Towanda	14.75	RH	7945	305.9
Edwin Lent	Towanda	9.52	RH	8445	302.7

BRADFORD COUNTY—(Wyalusing Association)

John H. Howard	Wyalusing	19.84	RH	10093	375.4
Karl D. Shiner	Towanda	17.41	R:GJ	7554	374.3
F. B. & S. H. Kerrick	Towanda	21.28	RH	10511	367.9
O. L. Fish	Wyalusing	12.80	RH	10338	367.5
Chas. O. Campbell	Wyalusing	15.47	RH	9997	353.7
P. V. Fisher & Son	Rummerfield	12.98	RH	9364	320.5
E. M. Miller	Towanda	17.30	RH	9487	319.8
Welbec Farms	Wyalusing	37.88	Mix & Gy	6814	317.1
W. B. Kennedy	Wyalusing	26.28	RH	8747	309.5
C. B. Culver	Laceyville	30.57	R:GH	8687	300.0

BRADFORD COUNTY—(LeRaysville Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Claude S. Gorham	LeRaysville	17.23	RJ	6937	424.4
J. H. Ford	Rome	8.00	RH	10942	396.8
Howell Powell & Son	Stevensville	9.48	R:GH:GG	9716	380.1
Fred Daugherty	Rummerfield	11.20	RH	10852	366.4
Leland S. Fox	S. Apalachin, N.Y.	9.76	Mixed	7981	361.3
Jas. E. Eastman	Rome	7.12	RH	9786	346.1
M. B. Chilson	Nichols, N.Y.	9.67	R:GH	9499	345.7
Roland Jones	S. Apalachin, N.Y.	12.20	R:GH:GG	8323	331.5
Geo. M. Jones	Little Meadows	10.00	GG	6604	330.2
H. W. Russell	Orwell	12.43	R:GH	8898	326.0
C. W. Ford	Rome	13.09	R:GH	9023	319.9
L. L. Allis	Rummerfield	19.19	RH	9157	306.6
D. J. Morgan	LeRaysville	14.66	R:GH:GG	7528	304.3
E. W. Graves	S. Apalachin, N.Y.	12.38	R:GH R:GG	8139	300.5

BUCKS COUNTY—(Bucks No. 1)

Philip W. Smith	New Hope	18.99	R:GH	8218	394.7
M. H. Walton	New Hope	9.96	GG	7845	369.3
J. S. Briggs	Yardley	16.12	R:GG	7970	368.0
Russell Watson	Newtown	18.93	RG	6883	344.1
Willard Wright	Yardley	14.07	R:GH	10113	340.1
Earl T. Daniels	Pineville	12.86	R:GH	9857	337.6
A. Satterthwaite	Woodside	16.53	RH	10317	336.3
Milton Satterthwaite	Woodside	11.83	R:GH	9373	319.3
Henry C. Pickering	Woodbourne	8.00	R:GG R:GH	8018	312.4
Lester I. Smith	New Hope, RD	8.00	R:GG	6501	308.3
Charles A. Rowe	Yardley	15.99	RH	9484	308.2
S. Wilfred Smith	New Hope	14.01	RG	5899	302.7

BUCKS COUNTY—(Bucks No. 3)

Lewis Duerr, Jr.	Langhorne	14.07	RH	12822	435.5
L. Satterthwaite	Newtown	19.25	R:GH	10522	363.7
R. E. Atkinson	Wrightstokn	13.36	RJ	6991	363.5
Jos. P. Canby & Son	Hulmeville	40.36	Mixed	9348	341.9
E. B. Morris	Bristol	34.55	RG	6901	336.1
F. E. Snively	Newtown	13.86	Mixed	8089	306.9
C. Ralph Powell	Bristol	16.20	RH	8380	301.3

BUCKS COUNTY—(Bucks No. 2)

W. Hunsberger	Plumsteadville	18.42	RH	12171	417.7
J. W. Hallowell	Ivyland	14.18	R:GH: Mixed	10653	384.4
Claud Myers	Plumsteadville	19.59	Mixed	7366	369.9
I. S. Gross	Plumsteadville	15.22	RH	11091	363.8
H. A. Bishop	Perkasie	14.87	RH	10497	345.9
J. A. Shelly	Fountainville	15.00	GG:GJ	6827	343.8
W. A. Twining	Wycombe	10.30	RH	10299	342.7
Nicholas Goetter	Fountainville	9.78	RH	9319	333.2
C. L. Wilkinson	Rushland	12.76	R:GH	9464	330.3
J. Howard Cliffe	Ivyland	8.13	RG:RH	7086	314.3
W. H. Yerkes	Buckingham	15.60	RH	9284	310.1
F. W. Oehrle	Hatboro	10.00	RH	9110	308.5
H. Warner Hallowell	Ivyland	9.02	R:GH	8930	302.2
A. S. Mumbauer	Quakertown, RD	10.10	RA	7308	300.2

BUTLER COUNTY—(Butler Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
C. F. Edgar	Renfrew, R 2	9.96	RG	7873	379.0
John L. Schiever	Harmony, R 2	25.30	Mixed: R:GH	10372	371.3
Charles C. Martin	Cabot	14.00	R:GH	10361	364.9
Clyde Peffer	Portersville	6.13	RG	7129	358.9
Robert N. Dickey	Slippery Rock	9.68	R:GG	7384	349.1
Henry Reefer	Zelienople	9.15	RG	6898	344.6
E. S. Cooper	Slippery Rock	14.23	RG	6326	342.2
Thos. Cooper & Son	Euclid, R 2	21.83	PJ	6940	341.7
A. J. Lang	Cabot	15.42	RH	10385	338.8
J. G. Hendricks	Butler, R 1	21.93	R:GG:GH	7112	328.1
Robert S. Cain	Saxonburg	7.14	R:GH	8167	322.9
J. C. Belles & Son	Harmony	12.53	RH	9779	315.0
R. C. Hindman	Prospect	10.64	R:GJ	6205	312.2
Frank J. Cooper	Slippery Rock	14.22	RJ	5927	307.7
F. W. Moore	Portersville	10.48	R:GJ	5615	305.2

CENTRAL PENNSYLVANIA GUERNSEY BREEDERS ASSOCIATION

Paul Hoover	Patton	12.98	R:GG:H	9275	463.6
S. H. Markey	Loysburg	8.11	RG	8889	426.9
Sunny Mead Farm	Sinking Valley	28.91	R:GG	8894	416.0
Knarr Bros.	DuBois	38.35	PG	7992	391.1
Augustus Farabaugh	Loretto	6.17	R:GG	7890	384.9
E. H. Karlheim	Patton	7.38	R:GG	7306	383.5
Griffith Estate	Ebensburg	23.88	RG	7778	377.4
A. J. Yahner	Patton	10.16	PJ	6482	373.3
Victor Kline	Hastings	7.43	Mixed	7366	365.4
Colver Dairy Farm	Colver	16.24	RH	10759	361.9
The Wm. Irvin Co.	Big Run	17.77	RG	7112	358.0
J. W. Burket	Tyrone	14.00	R:GG	7578	355.2
W. J. Karlheim	Dysart	9.44	R:GG	6533	252.3
D. A. Morrow	Tyrone	11.40	RG	7087	350.2
S. B. Wasson	State College	20.05	R:GG	7202	348.9
J. E. Hindman	Tyrone	18.29	RG	7307	348.7
Mayes & Shane	Howard	24.40	RG	6690	332.7
Frank Wyles	New Enterprise	9.06	Mixed	7337	332.6
Mrs. C. M. Schwab	Loretto	20.30	RG	5891	322.9
W. J. Hoover	Patton	7.33	R:GG	5755	318.3
Paul Wyles	New Enterprise	7.16	Mixed	7331	308.1

CENTRE COUNTY—(Centre No. 1)

S. I. Corl	State College	7.00	RH	12409	452.2
Peters Brothers	Port Matilda	13.54	RH	11442	405.0
Western Penitentiary	Bellefonte	79.63	R:GH	11686	398.2
Gilbert C. Waite	Port Matilda	9.44	R:GG	8212	382.2
Geo. H. Wilson	Bellefonte	9.95	R:GH	10200	368.1
T. C. Kryder	Mill Hall	12.94	RH	10892	367.1
Lowden Kyle	Mackeyville	7.00	R:GH	10455	366.7
Hartle Brothers	Bellefonte	12.76	RH	10077	336.2
Allen Harter	Bellefonte	13.94	R:GH	9391	331.7
Geo. P. Gummo	Mill Hall	12.24	RH	9979	330.7
H. L. Wilson	Warriors Mark	12.96	Mixed	7520	320.2
C. O. Beck	Warriors Mark	14.46	Mixed	7514	306.3
Fred Davidson	Warriors Mark	9.22	Mixed	6949	302.5
Shoemaker Bros.	State College	24.92	R:GH	9564	301.7

CENTRE COUNTY—(Centre No. 2)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
J. Fred Slack	Centre Hall	9.80	RH	13122	438.1
W. F. Rishel	Centre Hall	12.54	RH	11512	373.9
R. E. Meeker	Centre Hall	7.09	RH	11010	361.4
Frank MacIntire	Rebersburg	9.65	R:GH	9403	349.1
S. F. Esterline	Greenburr	13.04	RJ	6319	346.9
Kyle M. Alexander	Julian	8.75	R:GH	8811	340.2
Fern T. Dunkle	Boalsburg	12.43	GH	9435	327.8
O. R. Gilmore	Salona	14.25	GH:GG	8314	319.6
Hugh C. Hayes	Mackeyville	24.06	Mixed	8047	308.3
Roy M. Hanna	Beech Creek	21.93	R:GH	8726	302.8

CHESTER COUNTY—(Chester Valley Association)

Harry B. Shenk	Elverson	32.86	RG	7859	389.3
Brandywine Meadow Farm	West Chester	29.82	R:GG:GH	8449	365.4
G. Fairlamb Beale	L. University	16.85	RJ	7251	362.0
G. Cadwalader	West Chester, RD	13.69	R:GG	7554	352.4
Frank A. Keen	West Chester	23.03	RH	10061	338.6
Mrs. Mary Carter	Pocopson	17.78	R:GG	7262	338.1
Hill Farm	Coatesville	41.00	GJ	6460	332.2
James Speirs	Downingtown	20.58	RJ	6376	331.4
James Latta	Parkesburg	20.90	Mixed	6764	314.9
Richard L. Fox	Downingtown	25.09	GG	6278	312.2
Mrs. John K. Kane	Glen Loch	49.30	R:GG	6598	311.0
Wm. M. Lloyd	Downingtown	22.25	RJ	5828	310.9
Edward Hoopes	West Chester	25.75	RJ	5541	310.0
Thomas & Howell	Whitford	46.46	R:GG	6471	302.3
Oswald B. Piel	Downingtown	19.22	RJ	5789	300.9

CHESTER COUNTY—(Oxford Association)

Scott Bunting	Oxford	20.21	RJ	7521	408.1
Caleb Chambers	West Grove	14.68	RJ:GJ	7031	382.7
Reid & Dickey	Oxford	8.61	Mixed	9890	358.0
R. E. Sharpless	L. Grove	37.90	GJ	7182	344.3
Thomas Sloan	Oxford	19.89	RH:GH	9680	335.2
E. B. Walton	London Grove	27.51	RJ	6457	324.4
Edgar Haines	West Grove	18.40	GG	6922	320.6

CHESTER COUNTY—(West Chester Association)

Delaware Co. Home	Lima	17.44	GH	11068	412.3
Wm. I. Reeves	West Chester, RD	14.01	GG	8292	404.1
Dunwoody Home	N. Square	15.60	RA	8941	361.8
M. L. Jones	Westtown	128.96	RH	9942	338.6
John A. Stratton	Glen Mills	15.40	Mixed	6757	321.8
James Jamieson	West Chester, R 4	17.05	Mixed	7973	321.0
Lawrence Folchman	West Chester	26.81	RH:GH	8933	319.3
A. J. McCue	Avondale	21.33	GG	6769	317.8
Norman W. Frank	West Chester	23.82	Mixed	8777	316.7
J. K. Mitchell	West Chester	16.83	Mixed	6453	313.0
Westtown School	Westtown	65.52	Mixed	7629	304.8
Leroy Harvey Est.	West Chester	19.94	RG	6373	303.0
Wm. P. Smedley	Media	40.08	RG:GG	6297	302.1
Wm. B. Rhoads	Oakbourne	32.64	RH:GH	8829	305.6

CHESTER COUNTY—(Coventry Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Wm. High	Phoenixville, R 4	15.52	RH	12363	418.5
State Institution	Pennhurst	90.68	GH	11924	411.6
Furman H. Gyger	Kimberton	26.35	RH:Mix	10244	402.8
Porter Farms	Valley Forge	27.88	RG	7936	402.8
H. L. Stoltzfus	Pottstown, R 2	15.56	RH	11180	378.9
Arthur H. High	Pottstown, R 3	13.65	RH	10933	365.0
H. R. Swavely	Pottstown, R 3	18.04	Mixed	9205	345.7
Rose Way Farm	Paoli	38.92	RJ	6615	337.7
Cedar Run Farm	Phoenixville, RD	12.66	RJ	6204	337.5
R. Holmes Page	Paoli	11.67	RG	6823	331.3
H. J. Bickel	Pottstown, RD	18.00	RH	9296	330.6
Bryncoed Farms	Kimberton	16.33	Mixed	8337	324.0
Warwick Furnace Farms	G. Moore	47.11	RG:GG	6579	311.4
Valley Hill Farm	Phoenixville	45.48	RG	6608	305.2
H. A. Gawthrop	Phoenixville	20.73	RH:RG	9334	321.9

CLARION COUNTY—(Clarion Association)

J. P. C. King	Summerville	6.36	RH	11994	401.4
Foxburg Farm Herd	Foxburg	33.72	RG	7827	398.0
R. L. Fleming	New Bethlehem	10.07	RG	7366	388.3
J. W. M. Gruber and Sons	Shippenville	25.19	R:GG	7767	370.5
B. W. Thompson	Clarion	9.71	RH	10391	370.3
Ray Shook	Sligo	13.68	R:GG	7872	367.1
Cyrus A. Dinger	Mayport	10.38	GH:GG	7766	353.2
Fred L. Stahlman	New Bethlehem	6.56	R:GG	6713	344.7
Wm. and C. A. McCauley	New Bethlehem	13.78	RH	9853	335.8
H. G. Mahle	Miola	6.50	GG	6928	334.0
Dellas A. Stahlman	New Bethlehem	12.92	R:GG	6641	332.8
O. S. Burnham	Corsica	9.23	RG	6576	330.8
J. E. Lucas & Son	Mayport	15.90	R:GH	9363	330.6
O. C. Slaughenhaupt	Sligo	10.68	GG	6686	321.4
J. W. Hartman & Son	Sligo	14.37	R:GG	6373	312.4
C. L. Risher	East Brady	22.55	R:GH	8520	305.6

CLEARFIELD COUNTY—(Clearfield Association)

Liddle Estate	DuBois, RD	9.78	Mixed	8215	365.6
Wendell Turner	Philipsburg, RD	23.60	Mixed	9106	359.0
C. W. Peters	Woodland	11.75	Mixed	8304	355.8
M. W. Shimmel	West Decatur, RD	10.80	Mixed	7980	351.5
J. G. German	Philipsburg, RD	12.16	Mixed	8384	349.1
C. O. Mattern	Osceola Mills, RD	17.39	R:GG	7249	341.0
L. S. Hay	Sabula, RD	7.68	R:GG	6871	333.1
G. B. Wachob	DuBois, RD	14.86	GH	7940	324.0
S. R. Thompson Est.	Philipsburg, RD	13.81	Mixed	7689	316.6
John Flood	Woodland, RD	11.30	Mixed	7084	313.3
Paul Hartzfeld	Grampian, RD	10.68	R:GG	6239	310.6
R. H. Mull, Agent	Philipsburg, RD	9.71	GG	5866	300.0

COLUMBIA COUNTY—(Columbia Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Danville State Hosp.	Danville	89.29	R:GH	11578	402.1
Wm. Fairchild	Berwick	23.02	RH:R:GJ	9690	392.6
H. B. Rote	Millville	11.82	RH	12480	390.2
F. F. Hayman	Stillwater	12.87	RG	6285	339.6
Fred Hilner	Millville	8.37	RH	10380	332.3
Roland H. Seely	Nescopeck, R 1	12.94	R:GG	7272	327.4
Carter Bache	Stillwater	8.05	RG	6766	321.0
H. H. Hayman	Stillwater	5.93	RH	6460	320.0
R. J. Breisch	Catawissa	21.53	Mixed	6969	315.9
H. R. Andrews	Stillwater	6.59	RG	6194	307.5

CRAWFORD COUNTY—(Titusville Association)

H. C. Hutchison	Hydetown	12.16	R:GG	8663	409.1
Dave N. Burrows	Pleasantville	16.87	R:GH	10342	354.7
James Kelly	Titusville	12.70	RG	7351	350.4
Mark Kelly	Centerville	6.64	R:GH	10118	343.1
Hasbrouck Bros.	Titusville, R 2	16.03	RH	9885	331.5
Geo. W. Church	Townville	9.35	RJ	6027	325.7
G. M. Hummer	Titusville	8.93	RJ	6326	323.6
O. T. Ongley	Grand Valley	10.04	RH	9400	319.2
Milo Spencer	Spartansburg	11.79	Mixed	7255	317.6
A. K. Hummer	Titusville, R 2	22.27	RH	9395	317.4
Burl Hayes	Edinboro	16.36	GH	8336	316.9
Harry K. Vail	Tryonville	11.64	Mixed	8379	316.9
J. G. Sherred	Venango	11.79	RH	9646	315.5
Harry Wheatall	Titusville, R 2	11.36	R:GH	8626	314.4
M. L. Fenton	Titusville	20.57	Mixed	7244	313.3
Herbert Mars	Titusville	7.34	GG	6707	305.1

CRAWFORD COUNTY—(Crawford-Venango Association)

Harry Sharp	Diamond	6.93	RJ	6557	367.4
Murray McCullough	Meadville	21.50	Mixed	9150	361.6
E. E. Virtue	Meadville, Star Rt.	20.26	GJ	6893	350.9
Irwin Smith	Guys Mills, R 2	5.42	RH	10090	350.2
Don E. Smith	Townville, RD	5.85	RJ	6192	349.4
James A. Sharp	Diamond	11.11	GJ:GH	6935	312.7
D. C. Pettigrew	Townville, R 1	8.74	R:GJ	6691	344.8
Dr. O. H. Stanford	Cambridge Springs	12.61	RG	6978	327.6
Joseph Poux	Guys Mills, R 2	8.75	GH	8613	300.8

CRAWFORD COUNTY—(Western Crawford Association)

G. A. Belknap	Conneautville	12.10	RH	11875	397.7
J. S. Patton	Hartstown	16.17	RH	10231	362.1
R. H. & P. M. Dodds	Adamsville	8.31	Mixed	7979	353.4
George Hazen	Conneaut Lake	13.39	R:GJ	6444	344.8
Ray McConnell	Atlantic, RD	7.52	R:GH	10151	335.2
Paul McMichael	Conneaut Lake	9.93	RJ	6278	335.2
C. H. Steadman	Atlantic	8.79	Mixed	8435	311.0

CUMBERLAND COUNTY—(Cumberland No. 1)

Ivo V. Otto	Carlisle, R 6	18.07	RH	14766	506.5
Vance C. McCormick	Harrisburg	5.24	R:GG	9695	467.0
Clarence M. Cornman	Mechanicsburg, R 6	10.73	RH	12181	418.9
Harry E. Hamsher	Mechanicsburg, R 4	11.25	GH	11997	414.9

CUMBERLAND COUNTY—(Cumberland No. 1)—(Cont.)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Henry B. McCormick	Harrisburg	6.18	R:GG	8145	403.5
Alfred F. Kost	Carlisle, R 7	19.43	RH	12100	402.6
J. H. Lear	Carlisle, R 5	13.56	RH	11124	391.5
Elmer C. Ludt	Carlisle, R 5	13.51	RH	11638	389.9
A. G. Wingert	Mechanicsburg, R 5	17.29	RH	11224	372.2
H. K. McCullough	Newville, R 1	18.78	RG	7012	369.9
Abner E. Rider	Mechanicsburg, R 2	17.47	R:GH	10499	368.4
S. B. Weber	Mechanicsburg, R 2	21.63	R:GH	11112	364.6
J. Norton Kruger, Herd 1	Carlisle	19.57	RH:R:GG	10259	364.3
Abram N. Lehman	Carlisle, R 1	19.61	R:GH	10701	358.6
Paul C. Gibble	Mechanicsburg, R 5	19.34	RH	10528	353.3
S. W. Zeigler	Mechanicsburg, R 1	16.00	R:GH	9940	351.4
George Nauss, Jr.	Boiling Springs, R 1	14.30	R:GH	9755	349.2
Cyrus G. Niesley	Mechanicsburg, R 1	18.45	RH	9574	347.5
Anne McCormick	Harrisburg	7.16	RG	6934	343.8
W. A. Eckert	Mechanicsburg, R 6	9.90	R:GG	7817	331.7
John W. Raudabaugh	Carlisle, R 7	22.23	R:GH	9820	330.5
G. Woir Strock	Mechanicsburg, R 1	24.04	RH	9517	327.8
George M. Harman	Barnitz	9.78	GG	7623	325.3
Mark R. Basehore	Mechanicsburg, R 5	11.84	R:GH	10152	324.6
A. P. Loudon	Carlisle, R 2	14.88	RH	10119	318.3
F. B. Sellers, Jr.	Carlisle	10.82	R:GH	8892	310.4
F. D. Myers	Mechanicsburg, R 1	27.43	GH	9163	309.3
William S. Ker	Carlisle, R 9	18.78	RH	9100	304.6

CUMBERLAND COUNTY—(Cumberland No. 2)

Hugh L. McMeen	Carlisle, R 6	11.88	R:GH	11982	422.8
Wilson A. Shughart	Carlisle, R 7	10.31	RH	11115	383.2
Guy L. Loy	Newville, R 4	14.43	R:GH	10748	348.6
Wm. G. Minnich	aCrlisle, R 6	9.75	R:GH	9551	342.7
H. W. Allison	Shippensburg, R 5	14.04	RH:R:GG	10462	342.1
W. W. Peffer	Newville, R 1	10.44	RH	9425	339.4
W. A. Woods & Son	Carlisle, R 8	12.96	RH	9681	330.5
R. Bruce Stuart	Carlisle	18.91	RH	10045	324.9
Paul O. Sunday	Carlisle, R 1	12.54	R:GH:GG	8660	321.1
Harper J. Wetzel	Carlisle, R 4	14.10	RH	9543	313.7
Ernest Shover	Carlisle, R 7	13.87	Mixed	8665	309.3
J. Oren Skelly	Shippensburg, R 2	11.64	R:GH	9062	307.1
Benj. F. Garman	Boiling Springs, R 1	10.75	R:GH	8506	302.3

DAUPHIN COUNTY—(Dauphin Association)

A. H. Erdman & Son	Elizabethville, R. D.	18.72	RH	11237	365.1
Hershey Estate, 30A	Cloverdale Farm	45.27	R:GH	11107	362.5
Daniel C. Romberger	Elizabethville, R. D.	9.01	R:GH	10457	357.6
A. M. Hess	Shiremantown	11.84	R:GH	10514	346.9
Harrisburg State Hosp.	Harrisburg	13.54	R:GH	10018	341.0
Chas. K. Fertig	Dauphin, R. D.	10.03	RH	10478	330.7
Hershey Estate, 27A	Meadowbrook Farm	28.62	R:GH	9539	329.7
Max A. Lauffer	Middletown, R. D.	6.41	RH	8586	318.8
Clayton Gingrich	Hershey, R. D.	20.53	R:GH	10018	315.9
Calvin L. Engle	Lykens, R 1	10.00	GH	9573	311.4
William O. Adams	Millersburg, R. D.	10.25	Mixed	7009	309.5
Howard Speece	Dauphin, R. D.	18.11	R:GH	9459	304.8

ERIE COUNTY—(Wattsburg Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
J. Taft Williams	Wattsburg	5.00	RH:J	8663	372.2
Paul Dennie	Union City	5.50	GH	9518	365.6
Williams Brothers	Union City	10.67	R:GH	10423	346.0
Hazen C. Follett	Corry, R 5	15.35	RH	10045	342.6
William Hartwig	Harbor Creek, R 1	14.18	Mixed	8178	329.2
Carl Stowe	Union City	8.40	R:GH	9530	328.3
H. A. Burdick	Waterford	18.99	GH	8776	319.8
Fred Hopson	Wattsburg, R 4	12.36	R:GH	9270	314.6
L. W. Post	Waterford	17.33	GG:GJ	7204	313.6
Sacred Heart Mission	Girard	30.90	RH	9261	312.0
Lester Hosbach	Erie, R 1	31.64	RH	9505	306.4
Geo. Robinson	Wattsburg, R 4	30.07	R:GH	8759	304.3

FAYETTE COUNTY—(Fayette Association)

George Gault	Dawson	10.65	R:GG	6840	357.9
J. Espey Lynn	Vanderbilt	15.90	R:GG	7937	350.9
Pleasant Level Dairy	Connellsville	22.82	R:GH R:GG	7794	327.6
W. H. Blaney	Smock	10.60	R:GH	9090	320.7
E. E. Arnold	Vanderbilt	8.14	R:GH	9222	316.3
Hustead Farm, Barn 2	Uniontown	27.64	RH	8940	315.1
Hustead Farm, Barn 1	Uniontown	19.37	Mixed	6397	308.8
W. J. Stewart	Brownsville	27.35	RH	8781	302.9

FRANKLIN COUNTY—(Western Franklin Association)

J. W. Aughinbaugh	Mercersburg	11.42	Mixed	8127	397.6
J. W. Hoffeditz	Mercersburg	12.08	R:GG	8522	391.5
Wilson Sisters	Metal	7.83	Mixed	6349	338.0
L. G. Bain	Mercersburg	13.66	R:GG	6570	324.3
H. S. Arthur	Ft. Loudon	14.34	Mixed	7700	324.3
D. M. Hawbaker	Mercersburg	11.07	GH	8447	301.8

FRANKLIN COUNTY—(Southern Franklin Association)

Irvin Benedict	Waynesboro, R. D.	10.75	RG	8152	437.1
James Dayhoff	Waynesboro	12.22	R:GA	10371	418.8
W. H. Stevenson	Midvale	38.08	Mixed	8288	373.0
Frank N. Miller	Waynesboro	13.09	RG	7917	368.9
Ira Shank	Waynesboro	16.56	Mixed	8755	361.9
John Myers & Son	Waynesboro	22.75	Mixed	8077	344.5
John W. Burkholder	Waynesboro	10.93	R:GG	7727	340.6
Luther Miller	St. Thomas	8.42	RH	9422	306.4

HUNTINGDON COUNTY—(Huntingdon Association)

H. L. Grazier & Son	Warriors Mark	12.42	RBS	9679	390.8
Oscar Gilliland & Son	Franklinville	10.22	Mixed	9345	388.8
James S. Oliver	Franklinville	10.89	R:GH:Mix	9971	371.8
N. E. Black	Alexandria	13.13	R:GG	8034	354.5
John T. Martin	Alexandria	11.53	RH	9635	330.9
J. F. & H. B. Tussey	McAlevy's Fort	14.00	R:GH	9308	320.0
P. I. R.	Huntingdon	54.00	RH	8630	317.1
Charles Keller	Water Street	12.01	GG	6776	311.7
Guyer Bros.	Tyrone, R 5	10.13	GH	8924	302.9
D. Alton Grazier	Tyrone, R 5	10.00	R:GH:Mix	7458	301.5

INDIANA COUNTY—(Indiana No. 1)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
William S. Wetzel	Marion Center	13.72	R:GJ	8469	451.1
C. C. Pollock	Marion Center, R 2	7.00	R:GJ	7475	416.1
H. A. McIsaac	Rochester Mills	10.12	GJ	7624	409.1
H. O. Kimmel	Shelocta	15.22	RH	12025	400.7
Indiana County Home	Indiana, R 5	20.29	R:GH	10640	371.0
Carl Walker	Marion Center	13.69	R:GJ	6683	361.0
John S. Rankin	Indiana, R 1	8.85	R:GJ	6513	357.6
Clyde Houck	Clymer, R 1	8.98	RJ	6837	354.9
Quay McMillen	Clymer, R 1	8.64	RJ:Mixed	7252	355.8
H. M. Travis	Smicksburg, R 1	8.50	R:GG	7847	339.4
H. W. Mumau	Clymer, R 1	7.24	R:GJ:H	6935	339.4
Torrance State Hosp.	Blairsville	29.14	RH	11202	338.9
C. L. Steele	Marion Center	8.04	R:GJ	6650	338.2
C. D. Bence	Marion Center	15.65	R:GJ	6452	332.8
I. M. Speedy	Livermore	13.37	G:RG:Mix	7544	332.5
H. H. Wetzel & Sons	Marion Center	9.62	RJ	6297	328.4
W. F. Barkley	Livermore, R 2	10.86	Mixed	7925	324.5
G. C. Swan	Home, R 1	14.84	R:GJ	6202	326.1
William C. McMillen	Home, R 1	15.06	R:GJ:H	7084	310.7
A. P. Marshall & Son	Smicksburg, R. D.	18.59	Mixed	7244	308.0
F. B. Camp	Cherry Tree	17.09	R:GG	6376	303.7
C. S. Gerhard	Blairsville	19.60	RH	9165	302.0

INDIANA COUNTY—(Indiana Association No. 2)

John F. Pounds	Indiana, R 5	15.82	R:GH:G	10536	394.6
H. M. Brown	Indiana, R 5	17.67	Mixed	8651	375.1
Vallie Coble	Cherry Tree	7.17	Mixed	8142	373.4
R. B. Miller	Shelocta, R. D.	7.34	R:GH	8197	363.8
B. B. Crawford	Smicksburg	11.00	R:GG	7041	348.4
Jay T. Gibson	Penn Run	6.29	R:GH	9576	344.5
Iril I. Savage	Penn Run	5.73	R:GH	9207	336.2
Clyde Haskins	Commodore, R 1	8.00	RJ	6722	335.2
Norman Little	Creekside	13.00	Mixed	8163	334.3
J. M. Hood	New Florence	10.67	R:GJ	6710	329.6
C. H. McCall & Sons	Indiana, R 5	14.56	R:GH	9967	319.8
James Lynch	New Florence	15.91	R:GG	6902	319.7

JEFFERSON COUNTY—(Jefferson Association)

A. J. Bullers	Brookville	9.18	R:GG	7807	413.5
S. B. Reed	Reynoldsville	5.83	RH	12049	409.2
G. O. Schuckers	Brookville	15.15	RH	11097	396.5
N. M. Dinger	Oliveburg	8.73	Mixed	9126	384.7
R. L. Ross	Brockway	8.76	R:GG	7717	349.8
Arthur Bullers	Brookville	8.69	R:GG	6519	336.5
William B. Rhodes	Punxsutawney	13.67	Mixed	6779	316.3
Dr. F. D. Pringle	Punxsutawney	14.88	R:GG	6201	315.2
D. E. Stewart	Brockway	8.71	R:GG	5724	304.0

JUNIATA COUNTY—(Juniata Association)

D. Q. Adams	Mifflintown	9.42	RH	12326	433.4
T. R. Auker	Mifflintown	9.92	RH	12298	420.3
J. W. Sieber	McAlisterville	10.16	R:GH	11553	404.7
C. D. Stouffer	Port Royal	16.52	GH	10849	382.1
Theorous Kauffman	Mifflintown	15.43	RH	10595	360.3
Carl Smith	McAlisterville	12.25	R:GH	10629	358.4

JUNIATA COUNTY—(Juniata Association)—(Cont.)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
T. F. McClure	Port Royal	9.15	RH	10349	348.5
C. I. Degen & Son	Mifflintown	6.70	R:GH	9763	345.7
C. A. Musser	Oakland Mills	11.65	R:GH	9348	344.4
J. W. Nipple	Walnut	8.66	R:GH:GG	8367	339.6
Karl A. Fettig	Mifflintown	11.03	R:GH	9868	333.6
John L. Gelnett	Millerstown	6.47	RH	9271	331.8
H. E. Groninger	Port Royal	16.29	RH	9560	326.7
T. K. Wise	Thompsontown	9.00	R:GH	9221	322.0
J. Irvin Clark	Port Royal	10.00	Mixed	8328	320.2
L. Roy Henry	McCoysville	7.30	RH	9015	316.1
Geo. C. Sheesley	Mifflin	7.08	R:GH	8688	310.7
H. T. Gray	Honey Grove	17.02	R:GH	8431	300.0

LACKAWANNA COUNTY—(Lackawanna Association)

Carpenter Estate	Waverly	10.98	RH	10339	375.2
Ralph E. Naylor	Factoryville	20.14	R:GH:Mix	9156	362.3
Lewis Bros.	Dalton	15.70	R:GH:Mix	9557	361.1
H. S. Corselius	Ransom	17.98	R:GH	9799	345.5
Blackwell Bros.	Ransom	17.36	R:GH:Mix	8439	326.4
Wm. W. Coolbaugh	Ransom	19.33	R:GH	9191	332.4
Carl J. Spencer	Dalton	22.80	RH	8919	316.4
W. J. Michaels & Son	Dalton	13.13	R:GH	8975	312.1
Miller Bros.	Clarks Summit	24.65	RH	9315	310.1
Fred Morrow	Clarks Summit	9.51	Mixed	7213	304.3
Thos. McLain & Son	Elmhurst	20.48	GH	8894	303.4
Howard Pallman	Dalton	19.19	GH	8469	302.1
M. E. Northup	Dalton	19.66	R:GH:Mix	8171	301.7

LANCASTER COUNTY—(Garden Spot Association)

Ira M. Eby	Gordonville, R 1	15.82	RH	13267	440.3
Elmer Stoltzfus	Elverson, R 3	15.63	RH	12064	403.6
H. R. Metzler	Paradise, R 1	15.67	R:GH	11991	394.8
Marvin V. Brubaker	New Holland, R 2	11.29	RH	12202	386.3
Mast Stoltzfus	Morgantown	20.83	RH	11477	373.0
Geo. G. Sauder	East Earl, R 1	15.19	RH	10233	327.1
H. K. Martin	Goodville	15.71	R:GH	9399	317.5
Samuel Martin	East Earl, R 1	10.88	R:GH	9252	317.0
J. F. Stoltzfus	Elverson, R 3	15.23	R:GH	9450	304.6

LAWRENCE COUNTY—(Lawrence Association)

N. E. Sampson	Volant, R 3	12.36	RJ	7113	417.0
J. W. Martin & Son	Bessemer	10.15	RJ	7777	404.4
Lauren Thompson	New Wilmington	17.94	RJ	7606	402.5
W. W. McMillen & Son	Wampum	16.65	RH	10839	380.2
H. L. McCurley	Enon Valley	9.96	R:GJ	6941	370.6
J. W. Bronson	New Galilee	13.55	RJ	6437	340.5
F. W. Ferris	New Wilmington	7.69	R:GG:RH	8064	323.5
J. C. Shoemaker	Enon Valley	13.59	R:GJ	6043	313.4
Cradwick Dean	New Castle, R 6	9.29	RJ	6169	309.6
T. C. Post	Volant	18.38	RH	8664	308.7
Arnold Bros.	Beaver Falls, R 4	10.20	RG	6157	304.6
Ralph W. Hartenbach	Monaca	14.27	R:GG	6246	304.4

LEBANON COUNTY—(Lebanon Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Hubert S. Miller	Myerstown, R 2	9.10	RH	13887	464.9
Ralph S. Heisey	Bachmansville	5.59	RH	11044	389.6
Frank Heilman & Son	Lebanon, R 3	31.19	R:GH	10595	369.9
J. H. Schott	Lebanon, R 7	22.22	RH	11000	365.6
Fairview Farms	Cornwall	56.39	RG	7535	363.1
Frank W. Fernsler	Lebanon, R 1	25.07	RH	10671	363.0
Harry B. Bomberger	Lebanon, R 6	12.26	RJ	6921	338.5
Levi Wolfe	Lickdale	19.60	RH	10129	336.7
J. Frank Reist	Myerstown, R 2	14.13	R:GH	9217	330.9
Wayne Keller	Myerstown	18.03	R:GH	10294	326.0
David K. Bomberger	Annville	9.18	RH	9700	319.5
Robert B. Royer	Prescott	12.80	RA	8333	315.6
Isaac Mock	Schaefferstown	7.00	RG	5898	312.6
John H. Troup, Jr.	Sheridan	17.01	RH	9143	310.5
Harry S. Forney	Palmyra, R 2	15.62	Mixed	6614	303.0

LEHIGH-NORTHAMPTON—(Lehigh-Northampton Association)

Edna Able	Nazareth, R 1	8.25	RH	12370	417.3
Harold Ziegler	Breinigsville	11.30	R:GH	11450	405.1
Henry Hillegass	Coopersburg	7.54	RH	10498	382.3
Milton Shoemaker	Walnutport	5.48	R:GH	11252	375.9
Gen. Harry Trexler	Allentown	9.93	RJ	7211	368.7
Allentown State Hosp.	Allentown	45.02	R:GH	11095	367.7
B. L. Hindenach	Easton	15.04	RH	10699	356.6
Claude Kemmerer	Bethlehem	9.00	R:GH	9370	341.7
P. L. Lichtenwalner	Emaus, R 1	16.58	R:GH	9912	331.6
J. Hamilton Slack	Easton, R 3	20.15	R:GH	9949	324.1
Wm. H. Rupp	Breinigsville	11.33	RH	9322	319.2
Saucona Farms	Bethlehem	41.57	R:GG R:GH	8742	314.4
John J. Snyder	Easton, R 5	22.71	R:GH	9210	305.7

LYCOMING COUNTY—(Lycoming Association)

H. A. Snyder	Montoursville	17.78	RH	15004	547.0
State Ind. Home	Muncy	25.75	R:GH	13243	475.2
Geo. L. McCormick	Allenwood	12.31	RH	11525	389.2
S. L. Nicholson & Son	Muncy	12.87	RH	10703	387.4
O. A. Shirey	Linden	17.26	RH	11004	366.0
G. A. Deewall & Son	Montgomery	14.84	RH	10762	351.7
A. J. Sealy	Allenwood	12.53	P:GH	10041	341.0
Sanitarium Farm	Allenwood	26.84	RH	10098	334.0
H R. Paulhamus	Hepburnville	15.79	RH	8461	331.2
McConnell Bros.	Hepburnville	26.10	R:GH	8160	321.9
C. L. Buss	Montgomery	13.96	RH	9367	321.3
A. N. Mantle	Jersey Shore	8.50	GH	8143	313.1

MERCER COUNTY—(Grove City Association)

Mercer Sanitarium	Mercer	14.04	RJ	9290	504.0
L. G. Pearson	Mercer	13.05	GG	9488	436.6
Ralph Gillgrist	Harrisville	10.03	R:GJ	7943	429.9
J. D. Baker	Grove City	13.86	RJ	7029	423.0
G. G. McDowell	Grove City	9.41	RJ	7719	419.6
Hugh Fergus	Slippery Rock	26.32	GG	8329	404.1
L. R. Critchlow	Harrisville	15.24	R:GJ	7006	403.6
C. E. Cummings & Son	Mercer	11.85	GJ	7085	393.0
W. I. Blake	Mercer	10.07	RJ	6977	387.6
John Porter	Sandy Lake	12.20	RJ	6814	383.2

MERCER COUNTY—(Grove City Association)—(Cont.)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
A. M. King	Mercer	8.25	RJ	6713	382.4
J. B. Griffin	Sandy Lake, R 1	10.08	RJ	6770	381.1
T. P. Campbell	Grove City	17.23	RH:GG	8761	376.8
Mercer Hospital	Mercer	6.26	RJ:GG	6979	356.8
Mrs. Mabel Williams	Sandy Lake	12.28	R:GJ	6783	355.5
J. W. Lees	Mercer	19.98	RJ	5674	352.9
I. O. O. F. Home	Grove City	16.30	RH	10637	352.5
Pew Estate	Mercer	17.98	R:GG	6494	342.7
M. M. King	Mercer	15.97	RH	9611	332.6
S. C. Miller	Grove City	18.07	GJ	5731	330.7
C. L. McCoy	Mercer	6.25	GJ	6086	330.2
G. D. Barnes	Grove City	8.62	RH	9334	328.4
G. B. McDougall	Grove City	18.86	R:GJ	6320	327.0
C. M. Worley	Mercer	8.17	RG	6346	325.5
W. D. White	Grove City	10.04	RH	9231	318.8
Frank M. Ross	Jackson Center	9.51	R:GJ	5924	311.3

MERCER COUNTY—(Mercer No. 3 Association)

Ellsworth Brown	Greenville	9.17	RJ	6953	375.4
Wilhelm Bros.	Sharon	13.79	R:GG	7938	366.3
A. S. McCullough	Sharpsville	10.99	RG	6900	347.2
E. S. Reichard & Sons	Transfer	19.34	RJ	6826	338.6
Ralph Brenner	Jamestown	23.57	R:GJ	5737	338.0
Harry Moore	Sharpsville	18.93	Mixed	8542	323.0
L. R. Cox	Pulaski	14.95	Mixed	7844	315.0
A. J. Robinson	Greenville	25.03	R:GG	6676	306.8

McKEAN COUNTY—(McKean Association)

E. D. Comes	Smethport	23.69	RH:Mix	13043	432.7
A. W. Huff	Mt. Jewett	10.21	RH:RA	9807	373.7
Wahlberg Brothers	Kane	18.76	Mixed	9398	364.5
Straub Farms	St. Marys	18.09	R:GH	10236	336.1
F. M. Johnston & Son	Kane	36.98	RG	6921	333.8
M. S. Comes, Jr.	Smethport	20.93	RH	9561	323.6
Albin O. Johnson	Kane	11.10	RH:Mix	8409	318.9
Grace E. Emery	Bradford	18.79	Mixed	8131	316.7
Amandus Larson	Ridgway	14.90	R:GH	8838	315.3
H. J. Gregory	St. Marys	23.96	R:GH	8429	305.3

MIFFLIN COUNTY—(Mifflin Association)

Amos C. Yoder	Allensville	13.75	GG	8392	376.7
David H. Byler	Belleville	9.48	R:GH	11264	372.4
E. H. Harshbarger	Mattawana	15.24	RJ	6960	367.6
H. A. & E. E. Price	Lewistown	13.13	R:GH	10168	365.8
Jesse Yoder	Belleville	11.48	Mixed	9874	358.5
H. H. Bradford	Lewistown	8.76	RH	9765	347.2
David E. Peachey	Belleville	10.25	R:GH	10325	346.8
Harry Ellinger & Son	Lewistown	15.66	R:GH	10451	343.6
Archie F. King	Belleville	13.12	R:GJ	6779	341.0
Samuel Mitchell	Lewistown	13.67	R:GH	9613	326.6
Irvin King	Allensville	6.00	RH	9542	326.4
Palmer Dreese	McClure	8.97	RH	8962	309.4
C. Wm. Bonson	Belleville	14.78	R:GH	8560	301.9
W. J. Crissman	Lewistown	13.33	RH	9186	300.1

MONGOMERY COUNTY—(Montgomery No. 1)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Henry A. Schell, Jr.	Phoenixville, R. D.	28.73	RH:GJ	10489	410.7
Harvey Murphy	Norristown, R. D.	17.00	R:GH	10109	379.4
Levi Schultz Estate	East Greenville	14.07	R:GH	10920	374.5
Shipley School	Gladwyne	12.13	RG	7815	373.3
H. D. Allebach	Trappe	19.18	RH	10231	369.8
Miss L. T. Morris	Chestnut Hill	10.09	RJ	6782	367.6
W. C. Randolph	Royersford, R. D.	21.07	RJ	6763	344.8
Homer S. Schultz	Hereford	11.70	RH	9827	341.3
A. K. Rothenberger	Lansdale, R. D.	20.56	RH	9055	318.1
Owen Gerhart	Palm	25.41	RH	9139	317.6
A. D. Hunsicker	Royersford	22.65	Mixed	8177	316.7
Gwynllan Farm	Gwynedd Valley	46.01	RG	6257	314.5
Mrs. Howard Bieler	East Greenville	15.16	R:GH	9194	314.4
Geo. Horrocks	Collegeville	8.55	RJ	6637	313.7
Ursinus College	Collegeville	15.36	RH	8833	305.0
Gouveneur Cadwalader	Fort Washington	9.63	R:GG	6205	303.8
C. Wm. Haywood	Ambler	22.01	RJ	5651	301.2

MONTGOMERY COUNTY—(Montgomery No. 2)

C. J. Renninger	Frederick	28.24	Mixed	9802	374.2
Shady Creek Farm	North Wales	18.07	RJ	6579	366.3
Wm. Pratt, Jr.	Willow Grove	18.90	Mixed	9180	354.7
William Stephens	Collegeville	12.27	RA	9139	345.5
J. L. Overly & Sons	Red Hill	12.10	R:GH	10266	341.7
Erdenheim Farms	Norristown, R 4	14.97	RJ	6319	338.2
Chas. E. Fetterman	Barto	16.34	R:GH	9192	329.5
Oswin Funk	Palm	16.50	R:GH	9001	316.5
State Hospital	Norristown	20.14	GH	9181	315.2
Hugh A. Hamilton	Spring House	19.96	RJ	6207	302.6
Frank Brinckman	Red Hill	11.85	GH	8842	301.5

NORTHUMBERLAND COUNTY—(Northumberland Association)

S. B. Shade	Mooresburg	5.17	RH	11432	389.8
George S. Wesner	Watsontown	16.03	R:GH	10850	361.9
W. C. Gauger	Watsontown, R 2	12.30	RH	10425	343.8
H. H. Crispen	Milton, R 1	8.63	RH	10209	343.2
Ed. Schnure	Milton, R 2	15.01	R:GH	9535	330.8
Geo. Weidenhamer	Milton, R 1	6.20	RH	9091	329.2
Walter Gresh	Watsontown, R. D.	17.32	R:GH	9876	325.7
Sunbury Milk Products Co.	Sunbury	36.85	R:GG	6510	317.0
Arthur Reimensnyder	Milton, R. 2	9.20	RH	9752	310.4
J. Daniel Smith	Milton, R 1	7.88	RG:RH	7446	302.6

PERRY COUNTY—(Perry Association)

Harry K. Stephens	Newport	7.82	RH	11796	396.1
James S. Beaver	Millerstown	13.10	RH	10747	379.1
George G. Beaver	Millerstown	15.20	RH	10620	378.9
Harry Bixler	Millerstown	6.00	R:GH	9962	368.9
Ward Milligan	Loysville	14.27	R:GH	10200	354.7
Jno. T. Snyder & Sons	Duncannon, R 3	8.90	RH	9651	334.7
N. B. Gable	Newport	8.07	R:GH	9327	329.8

PERRY COUNTY—(Perry Association)—(Cont.)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
H. N. Bernheisel	Green Park	9.50	R:GH	10555	329.0
Chas. Stambaugh	Elliottsburg	14.08	R:GH	9021	321.3
Jonathan Black	Millerstown	9.34	RH	9606	317.5
Harry K. Kraft	Newport	7.83	RG	5915	313.3
Ralph L. Smith	Millerstown	9.00	GH	9311	312.3
Homer Gable	Newport	8.00	R:GH	8878	311.9
E. F. Von Glahn	Newport	8.03	Mixed	7920	311.2
Hugh Loy	Loysville	13.72	RH	9571	307.0
William Weibley	Ickesburg	11.68	RH	8548	304.7

POTTER COUNTY—(Ulysses Association)

Lawrence E. Buck	Ulysses	25.31	RH	11512	409.0
John Bauer	Emporium	18.49	RH	10983	367.3
J. K. Martin	Galeton	12.27	R:GH	9478	357.3
N. J. Leete & Son	Coudersport	27.17	RH	9669	353.2
Dorr Thomas	Westfield	6.00	R:GH	9366	342.7
H. Leon Cass	Ulysses	15.80	RJ	6391	334.5
Chas. W. Warriner	Harrison Valley	13.86	RH	9148	318.2
Cleon Buck	Ulysses	12.47	RH	8696	308.5
Erway Bros.	Raymond	16.75	RH	9185	307.6
A. D. Smith & Son	Keating Summit	18.34	P:GH	7987	302.6

POTTER COUNTY—(Potter No. 2)

Don Stearns	Coudersport	8.10	R:GH	10790	368.4
Robert R. Lyman	Coudersport	10.21	R:GH:J	8929	346.9
Henry C. James	Genesee	9.64	RA	8497	335.6
Alonzo Perkins	Shinglehouse	7.75	RH	8530	306.9

SCHUYLKILL COUNTY—(Schuylkill Association)

Roy Gauker	Cressona	8.88	GH	10832	363.6
Roy Hunter	Lavelle	16.09	R:GH:Mix	9594	360.2
Robert Ludwig	Hegins	24.55	R:GH R:GG	9731	352.4
Boltz Farms	Summit Station	10.76	RG	7556	351.4
Guy S. Reed	Summit Station	15.67	R:GH	10056	349.3
A. J. Fidler	Rock	12.95	R:GG	6513	338.9
Wm. Buechley	Cressona	13.08	RJ	6365	336.2
Gurney Harner	Valley View	10.87	R:GH	9513	333.6
Jonathan Herring	Pine Grove	15.69	R:GJ	6452	332.9
C. S. Maurer	Ashland	9.16	R:GH:GG	9011	331.9
Christ Wagner & Sons	Tamaqua	26.97	RH:RGG	8972	331.5
E. Allen Hubler	Ashland	10.76	Mixed	8909	327.5
Arthur Heisler	Tamaqua, R 1	21.38	R:GH	8914	320.6
A. T. Riegel	Schuylkill Haven	16.52	R:GH	9456	317.6
U. E. Rhein	Cressona	8.99	R:GJ	6159	317.6
Harry Rickard	Gordon	19.13	R.GJ	8381	311.8
Elias Morgan	Pine Grove	9.86	RJ	6283	310.4
Paul Lengel	Pine Grove	21.64	R:GJ	6183	308.8
Wm. Tielman	Ashland	24.58	Mixed	8391	303.7
J. H. Zerbey	Pottsville	13.33	R:GJ	5745	300.6

SOMERSET COUNTY—(Somerset Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
John E. Blough	Holsopple, R 1	14.50	GH	10524	363.9
Somerset Co. Home	Somerset	44.77	RH	11011	358.4
Robert L. Maust	Berlin	9.74	Mixed	7995	353.1
O. W. Beachley	Somerset, R 5	15.29	Mixed	9112	350.9
Robert Wingard	Johnstown, R 7	11.83	Mixed	8931	334.1
Carleton Livengood	Salisbury	11.16	Mixed	7027	333 3
Mrs. Ellen Shockey	Somerset, R 1	12.00	Mixed	7575	329.1
W. H. Barnett	Sipesville	11.83	R:GSH	8521	328.2
P. Compton & Son	Salisbury	12.25	Mixed	7025	328.1
S. M. Horchler	Salisbury	16.45	Mixed	6643	326.3

SULLIVAN COUNTY—(Western Sullivan Association)

Fred Shaffer	Forksville	12.63	GH:GBS	8638	383.4
Walter Mulnix	Forksville	7.17	GH:GD	8660	371.2
Howard Plotts	Forksville	14.35	PG:GG	7406	356.9
Bernard Shaffer	Dushore	9.41	GG	7436	310.4
Harland Baumunk	Forksville	8.60	GH:GG	7437	310.3

SUSQUEHANNA COUNTY—(Gelatt South Gibson Association)

Cordie Allen	Nicholson	17.18	R:GH	13745	450.6
Curtis Allen	Nicholson	16.42	P:GH	13026	441.4
F. F. Resseguie	South Gibson	16.24	RH	12581	437.5
Arthur Bowell	Thompson	21.12	RH	10313	362.9
W. J. Horton	Clifford	26.58	R:GH	10405	354.4
C. F. Whitney & Son	Susquehanna	12.41	P:GH	10838	350.5
S. T. Howell	South Gibson	10.63	RH	9608	316.2
C. W. Ross	Nicholson	14.92	R:GH	6557	315.1
Everett Lee	Carbondale	14.34	GH:GG	7916	309.7

SUSQUEHANNA COUNTY—(Choconut Valley Association)

Geo. Beach	Apolacon, N. Y.	22.02	R:GH	10692	346.5
Thomas Murphy	Brackney	10.25	GH	10381	341.7
A. J. Patton	Brackney	18.28	R:GH	8671	332.4
Leo Walsh	Choconut	11.90	GH	9663	319.4
Wallace Jones	Little Meadows	7.00	GG	6088	307.2

SUSQUEHANNA COUNTY—(Western Susquehanna No. 1)

Floyd Hibbard	Springville	14.76	R:GH	13775	468.7
Dr. L. M. Thompson	Montrose	39.74	RH	13690	465.6
Marvin Bush	Montrose, R 5	24.75	RH	10863	380.1
A. R. Bush	Montrose	10.00	RH	10811	366.1
L. W. Briggs	Montrose	13.00	Mixed	8867	347.9
H. A. & T. J. Brown	South Montrose	30.54	RH	10268	342.6
Fernheim Farms	Montrose	22.06	RA	7654	341.4
Edna M. Stone	Montrose, R. D.	12.13	GG	6846	323.1
Chas. B. Dayton	South Montrose	20.38	RH	9117	309.7
Earl Sherman	Springville	23.80	R:GH	9315	303.2
Ellis Ellsworth	Meshoppen	32.07	RH	8591	300.5
Albert Lyman	Meshoppen	25.70	RH	9222	300.3

SUSQUEHANNA COUNTY—(Western Susquehanna No. 2)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Dana Mitchell	Springville	11.78	RH	14885	514.8
Wells Phelps	Nicholson	34.72	R:GH	11950	399.1
Ray Walworth	New Milfrd	25.00	R:GH	10376	371.1
W. H. Bush	Montrose, R 1	22.21	RH	10258	353.1
Walter Hoppe	Hop Bottom	16.00	R:GH	10546	344.2
F. R. Cope, Jr.	Dimock	28.51	RH	10149	344.1
James Ball	Montrose	24.09	RH	10214	333.9
G. C. Shaffer	Brackney	26.23	R:GH	8280	306.9
Fred Gunn	New Milford	16.40	RH	8740	304.7
Theron D. Cooley	Nicholson	22.70	R:GH	9031	303.0

TIOGA COUNTY—(Susquehanna Trail Association)

Halleck Holcomb	Liberty	11.00	RH	9045	364.8
S. T. Duffey	Lloyd	9.76	R:GH	10762	362.4
Albert Norman	Liberty	14.89	RJ	6253	347.1
Chancy W. Brian	Liberty	13.78	R:GH	9251	334.3
Edward W. Brian	Liberty	9.41	Mixed	8284	332.0
John Beck	Cogan House	7.09	R:GH	9862	320.9
Albert Herman	Ogdensburg	15.01	Mixed	7124	319.5
Dan Bonnell	Liberty	12.46	RG:J	6608	319.0
Moran Beck	Cogan House	6.00	GH	7097	304.4
Carl Shambacker	East Point	14.49	R:GH	8122	302.8
W. H. Schneider	Lloyd	11.00	RH	8527	301.4

TIOGA COUNTY—(Wellsboro Association)

Roy S. Bowen	Wellsboro	8.43	RH	13405	433.5
Clark Bowen	Wellsboro	12.26	RH	12773	430.5
William Stevens	Wellsboro	8.71	RH	12417	423.0
George B. Butler	Wellsboro	21.34	R:GG	8287	388.0
Gale Gerow	Wellsboro	13.92	RH	11864	371.7
Stillman Kendrick	Wellsboro	22.10	RH	11332	363.3
Fred Erway	Wellsboro	16.90	RH	10706	357.4
Ralph Sampson	Crooked Creek	14.94	R:GH	10156	354.9
Carl Hasker	Wellsboro	8.95	R:GH	9880	341.4
T. J. Erway	Wellsboro	13.30	RH	9854	322.7
Claude Carpenter	Crooked Creek	27.40	RH	9201	307.0
Harry Palmer	Middlebury Ctr.	20.33	GH	9118	306.9
Leon Torpy	Wellsboro	12.65	RH	7607	304.3

TIOGA COUNTY—(Cowanesque Valley Association)

D. R. Butler	Knoxville	10.62	RG	8862	441.2
John Tubbs	Osceola	17.82	RH	11864	396.5
Lucy D. Baldwin	Lawrenceville	19.18	RH	10196	320.4

TIOGA COUNTY—(Jackson Association)

A. D. Prutsman	Millerton	20.41	RH	13485	498.7
R. R. Baker	Gillett	12.29	RH	13118	461.3
Dan Bly	Pine City, N. Y.	8.42	RJ	7944	411.9
W. W. Deming	Millerton	19.48	RJ	7171	396.5
Frank Bly	Pine City, N. Y.	13.06	RJ	7093	393.0
William A. Segar	Rutland	11.15	R:GH	11006	385.4

TIOGA COUNTY—(Jackson Association)—(Cont.)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
E. B. Spencer & Son	Millerton	24.65	RH	10973	379.3
W. E. Garrison	Millerton	20.94	R:GG	7473	356.9
L. R. Stevens	Millerton	16.83	R:GH	10301	351.2
Fred F. Tillinghast	Gillett	11.69	RJ	6788	349.1
Noel Card	Lawrenceville	13.28	RJ	7080	346.7
Frank J. Allen	Lawrenceville	9.34	RJ	7124	339.0
Fred Cady	Millerton	14.72	R:GH	9642	335.8
A. G. Miller	Pine City, N. Y.	23.69	R:GH	9431	332.2
W. N. Smith	Millerton	16.08	RH:GJ	8211	323.8
Victor H. Hurd	Millerton	19.30	Mixed	7386	320.5
Frank J. Allen, Jr.	Lawrenceville	12.93	RH	8772	307.6
John D. Speer	Corning, N. Y.	11.38	R:GG	6765	305.9
Frank Hamilton	Pine City, N. Y.	11.08	RJ	5656	304.8

TIOGA COUNTY—(Mansfield Association)

W. A. Wilcox	Mainesburg	11.85	RH	11877	420.4
Ray Woodward	Mansfield	8.40	GH	10989	397.2
R. M. Broderick & Son	Mansfield	24.70	RJ	6557	341.6
Vaughn Managan	Covington	15.36	R:GH	10164	332.0
N. L. Whittaker	Covington	10.99	RH	10166	322.6
J. H. Inscho	Mansfield	16.63	RH	9821	312.1

UNION COUNTY—(Buffalo Valley No. 1)

A. C. Slifer	Lewisburg, R 3	8.61	RH	14698	520.8
W. S. Erdley	Lewisburg, R 1	8.01	RH	13794	454.9
Fred D. Dock	Lewisburg, R 1	12.79	RH	13174	449.5
Oscar Brouse	Mifflinburg, R 1	8.98	RBS	11416	445.3
C. E. Erdley	Lewisburg, R 1	18.66	RH	13169	429.5
J. L. Reitz	Lewisburg	17.55	RH	11996	416.0
James E. Boyer	Lewisburg, R 1	11.48	R:GH	12215	414.6
J. M. Erdley	Lewisburg, R 1	14.40	R:GH	11383	407.0
H. A. Walter	Lewisburg, R 1	11.81	R:GH	11512	404.0
Clark S. Miller	Lewisburg, R 3	14.59	R:GH	11465	394.8
H. K. Benner	Vicksburg	8.79	R:GH	11153	386.8
Robert H. Criswell	Lewisburg, R 3	6.90	R:GH	10494	377.7
Robert H. Hubler	Lewisburg, R 1	12.05	RH	10906	371.5
John S. Wehr	Mifflinburg, R 3	12.81	RH	10919	365.6
Mrs. Carrie Lincoln	Laurelton	10.30	R:GH	9660	359.9
P. C. Shade	Mifflinburg, R 3	9.76	RH	10777	359.4
W. J. Erdley	Mifflinburg, R 3	11.15	RH	10509	354.0
Evangelical Home	Lewisburg	12.80	R:GG	6968	351.3
Paul W. Young	Lewisburg, R 3	9.65	R:GH	9773	344.7
R. E. Musser	Lewisburg, R 3	12.92	RH	9856	335.1
J. S. Zeigler	Lewisburg, R 4	16.40	RH	9083	332.3
J. A. Roush	Winfield	14.76	R:GH	9527	329.8
Geo. B. Frederick	Lewisburg, R 3	17.34	R:GH	8739	311.6
J S. Hackenberg	Lewisburg, R 3	13.61	RH	9383	309.8

UNION COUNTY—(Buffalo Valley No. 2)

W. H. Sauers	Lewisburg, R 2	17.15	R:GH	11330	425.6
John Showalter	Millmont	7.48	R:GH	10786	395.9
P. E. Spangler	New Berlin	10.03	R:GH	10185	392.1
Calvin Stahl	Lewisburg, R 1	10.01	RH	11632	387.9
Ray Ruhl	Mifflinburg, R 1	9.10	GH	10230	384.7

UNION COUNTY—(Buffalo Valley No. 2)—(Cont.)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
A. R. Walter	Swengel	9.30	R:GH	9691	369.4
Robert J. Smith	Millmont, R 2	7.28	R:GH	11234	358.1
Chas. H. Pontius	Mifflinburg, R 1	9.44	R:GH	10186	357.8
Geo. A. Diefenbach	Lewisburg, R 2	9.43	R:GH	10054	352.4
J. O. Slear	Lewisburg, R 3	9.59	R:GH	10530	351.7
Newton Sanders	Millmont	8.05	R:GH	9336	350.5
A. A. Eisenhauer	Lewisburg, R 2	11.30	R:GH	9451	338.2
Lee Sheats	Millmont	9.55	R:GH	9429	337.0
Andrew J. Kelly	Millmont	12.72	R:GH	8790	325.3
Thos. E. Spangler	Lewisburg, R 1	9.00	RH	9269	315.2
W. J. Leinbach	Vicksburg	7.00	R:GH	8438	313.4
E. W. Groover	Lewisburg, R 1	13.50	R:GH	8131	305.7
John Pontius	Mifflinburg, R 1	17.12	R:GH	8550	304.9

VENANGO COUNTY—(Venango Association)

Lee Hancox	Titusville, R 5	8.36	Mixed	13051	528.6
Polk State School	Polk	126.22	RH	12494	423.7
D. H. Morrison	Van. R 1	10.27	RG	7757	366.1
I. S. August	Diamond, R 1	13.50	R:GJ	7012	355.1
E. W. Shaffer	Titusville, R 5	17.76	R:GG	7357	347.7
John L. Mitchell	Oil City, R 1	10.33	R:GG	6850	343.0
C. J. Dempsey	Titusville, R 4	8.57	Mixed	7435	326.4
W. E. Stewart	Titusville, R 4	13.59	Mixed	7991	320.8
Morck Oil Company	Star. Rt. Oil City	6.67	R:GJ	5939	307.5
McCoy Brothers & Co.	Emlenton, R 5	17.01	RJ	5781	304.1

WARREN COUNTY—(Warren Association)

W. E. King	Akeley	6.18	RH	13450	429.4
B. E. Firth	Russell	19.72	R:GH	9356	329.3
F. W. Swart	Corry, R 8	19.24	R:GH	9323	317.3
F. W. Fladry	North Warren	15.89	Mixed	8513	316.0
Dr. E. J. Kelley	Chandlers Valley	7.83	R:GH	8600	313.8
Warren State Hosp.	Warren	68.72	R:GH	9723	312.3
W. R. Weiler	Warren	22.09	R:GH	8562	306.9

WASHINGTON COUNTY—(Washington Association)

Hillsview Sanitarium	Washington	11.16	RJ	8824	448.8
Pa. Training School	Morganza	41.29	R:GH:RJ	10546	399.0
T. C. Gantz	Amity	16.98	Mixed	10519	396.6
Alex. Hamilton & Sons	Washington, R 7	15.02	GG	7789	389.9
P. F. Morris	Charleroi, R 1	13.68	RJ	7473	367.8
J. A. Dinsmore	Washington, R 3	27.84	RJ	7376	357.4
W. L. Hutchinson	Cecil, R 2	14.65	RH	10865	340.8
V C. McCracken	Charleroi, R. D.	11.76	RJ	6407	340.1
Lawrence McIlvaine	Bentleyville	8.95	RG	6331	336.0
A. W. Morrison	Eighty-Four, R 3	14.11	R:GJ	6670	334.2
J. T. White	Hickory	17.60	RH	9707	332.3
W. H. Farrar & Sons	McDonald, R 4	31.41	R:GH:RJ	7569	320.7
McClelland Bros.	Canonsburg, R 2	24.02	RH	10175	301.0
C. A. Hayden	Monongahela	31.35	RG	6334	300.8

WAYNE COUNTY—(Preston Association)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
John Paluch	Pleasant Mt.	34.16	R:GH	10397	388.2
Wm. Utter	Starrucca	8.35	GH	9229	340.4
D. G. Dix	Starlight	18.01	Mixed	8024	321.5
Wm. Erk	Starrucca	23.70	RH	9172	318.4
I. R. Doyle	Poyntelle	17.92	R:GH	8749	309.5
H. A. Greenwood	Lakewood	12.34	GH	9005	308.2
G. M. Dibble & Son	Starrucca	22.93	RH	9100	306.5

WAYNE COUNTY—(Damascus Association)

Walter Blum	Boyds Mills	13.39	RH	11274	374.2
Blackwell Bros.	Damascus	10.51	RH	10713	371.9
Warner Robbins	Beach Lake	16.10	RH	10114	350.4
Henry Knorr	Honesdale	11.99	RA	8853	345.5
Lloyd Douglas	Pleasant Mt.	24.48	Mixed	8933	345.5
Clarence Noble	Boyds Mills	17.04	R:GH	9883	340.5
Wm. Lovelass	Milanville	15.24	R:GH	9419	328.7
White Bros.	Callicoon	20.59	R:GH	8956	315.4
Russell Sheard	Milanville	27.47	R:GH	8992	313.4
L. J. Martin	Honesdale	10.59	R:GH	9061	309.9
Emmett Olver	Honesdale	21.87	R:GH	9144	304.6

WAYNE COUNTY—(Wayne Association)

Farview Hospital	Waymart	27.94	RH:GG	10046	432.6
E. H. Blake	Honesdale	23.99	RH	10839	397.4
Russell Erk	Prompton	30.74	RJ	7915	396.3
Robert Eno	Seelyville	23.87	RA:RJ	9043	408.3
George Roesner	Aldenville	13.66	R:GJ	7336	394.7
B. F. Kennedy	Pleasant Mt.	23.93	GH	10386	366.4
L. H. Grimm	Honesdale	13.83	RH	10479	347.4
W. K. Bryant	Honesdale	8.82	RJ	6240	345.1
W. J. Hauenstein	Waymart	24.41	RJ	6437	339.3
S. O. Snedeker	Waymart	24.34	R:GJ	6447	337.5
George Erk	Seelyville	28.18	RJ	5920	332.0
E. H. Ledyard, Jr.	Waymart	18.76	GJ	6219	318.6
Hutchinson Bros.	Honesdale	17.67	Mixed	6880	307.4
C. Rickard	Honesdale	15.92	R:GH	9021	303.4

WAYNE COUNTY—(Lake Ariel Association)

Jessie Miller	Waymart	13.24	RH	13017	431.9
Clark Enslin	Waymart	9.33	R:GJ	7267	378.5
Herbert Telshaw	Waymart	9.67	R:GG	8292	375.5
F. E. Carlton	Lake Ariel	10.84	R:GH	10571	366.0
Wm. H. Osborne	South Sterling	8.00	RG	8374	364.6
Garland Enslin	Gravity	4.12	R:GH	10032	362.5
D. L. Chapman	Hamlin	15.67	R:GH	10364	344.3
Alfred Bortree	Moscow	18.80	GG:GH	8845	343.5
John Simpson	Lake Ariel	12.92	RH:GG	8618	335.3
Stanley Bagnick	Waymart	10.73	GG	8578	330.3
B. F. Chumard	Lake Ariel	8.64	R:GH	9019	321.4
Ray Frieble	Greentown	7.11	R:GH	8888	313.3
Sherman Fowler	Greentown	5.08	G:GH	6638	308.6
John R. Gilpin	Greentown	7.00	R:GH R:GG	8371	308.6
John C. Grimm	Greentown	6.83	R:GH:G	7687	308.5
Marvin Enslin	Waymart	14.19	R:GJ:GH	6933	303.8

WESTMORELAND COUNTY—(Westmoreland No. 1)

NAME	ADDRESS	AVE. No. COWS	BREED	LBS. MILK	LBS. FAT
Miss I. C. Wolhwend	Salina	10.01	RBS	10059	406.3
J. N. Alcorn	Saltsburg, R 2	14.88	GH	10052	396.7
John Moffat	New Alexandria	14.00	R:GG	8580	364.2
F. M. Kintigh	Irwin, R 2	13.27	Mixed	8347	339.4
F. E. Lyons & Son	Saltsburg	5.59	R:GH	8986	323.4
J. M. & C. A. Lemon	Saltsburg	16.22	R:GH	8625	314.7
St. Vincents Archab'y	Latrobe	56.12	R:GH	9720	310.7
R. C. Lemon & Son	Saltsburg, R 2	7.50	R:GH	9102	309.4
Silvis Farms	Greensburg, R 1	35.54	R:GH R:GJ	8886	308.7
Frederick Brothers	New Kensington, R 2	7.00	R:GH	8924	305.7

WESTMORELAND COUNTY—(Westmoreland No. 2)

Westm'land Co. Home	Greensburg	26.13	RH	13823	468.6
Orphans' Home	Ligonier	9.28	R:GH	9300	388.9
W. S. Martin	Belle Vernon	13.42	Mixed	8601	373.9
Martin Farm	Ligonier	10.92	R:GG	7192	361.6
J. C. Gaut	Alverton	16.70	R:GH	9520	360.5
George H. Patterson	Belle Vernon	13.12	RG	6787	354.2
S. W. Heath	Belle Vernon	20.04	R:GG	7249	350.5
D. W. Robertson	West Newton	17.42	Mixed	8256	348.4
G. R. Funk	Hunkers	22.89	Mixed	9197	344.6
Rolling Rock Farms	Laughlinstown	11.05	RBS	7559	316.1
J. E. Wineman	Youngwood	15.92	R:GH	9280	314.4
E. G. Summy	Mt. Pleasant	16.73	R:GH	9235	340.8
Todd Brothers	Belle Vernon	11.64	R:GG:Mix	7201	304.3

WYOMING COUNTY—(Mehoopany Association)

E. V. Prevost	Tunkhannock, R 3	12.87	RH	10836	371.9
O. H. Love	Mehoopany, R 3	14.39	R:GG:GH	8444	343.8
Chas. Love	Mehoopany	9.88	R:GG	7760	338.7
Clarence Henning	Mehoopany	15.47	RH	9762	334.0
Clark Smales	Mehoopany	8.33	GH	8807	329.1
C. H. Reynolds	Tunkhannock	11.48	R:GH	8976	323.9
J. B. Sheehan	Mehoopany	16.19	R:GH	8364	311.9
C. T. Vaughn	Mehoopany	22.52	RH	9305	307.4
Furman Bros.	Mehoopany	17.32	GH	8483	305.6
B. C. Adams	Mehoopany	7.95	GG:R:GH	6694	301.1
Rodney Decker	Tunkhannock	8.85	GH	7954	300.1

YORK COUNTY—(Northern York Association)

G. B. Livingston	E. Berlin	10.52	R:GH	11639	426.6
J. J. Hamme	Abbotstown	10.67	RG	7506	376.1
Mahlon N. Haines	York, R 7	26.40	R:GH R:GG	10742	364.6
F. L. Krall & Son	E. Berlin	15.51	RH	10620	354.7
H. M. & M. B. Emig	Hellam	17.88	GH:R:GJ	8330	348.8
L. D. Myers	Wellsville	7.74	R:GH	9854	333.9
J. Raymond Arnold	Hellam	38.54	R:GG	7057	333.7
J. S. Brandt	Dallastown	18.52	GH:R:GG	7554	333.2
D. D. Hoover	Wellsville	5.19	R:GH	10421	328.6
Walter W. Little	Hanover	15.55	RG	6982	308.1

End of Volume